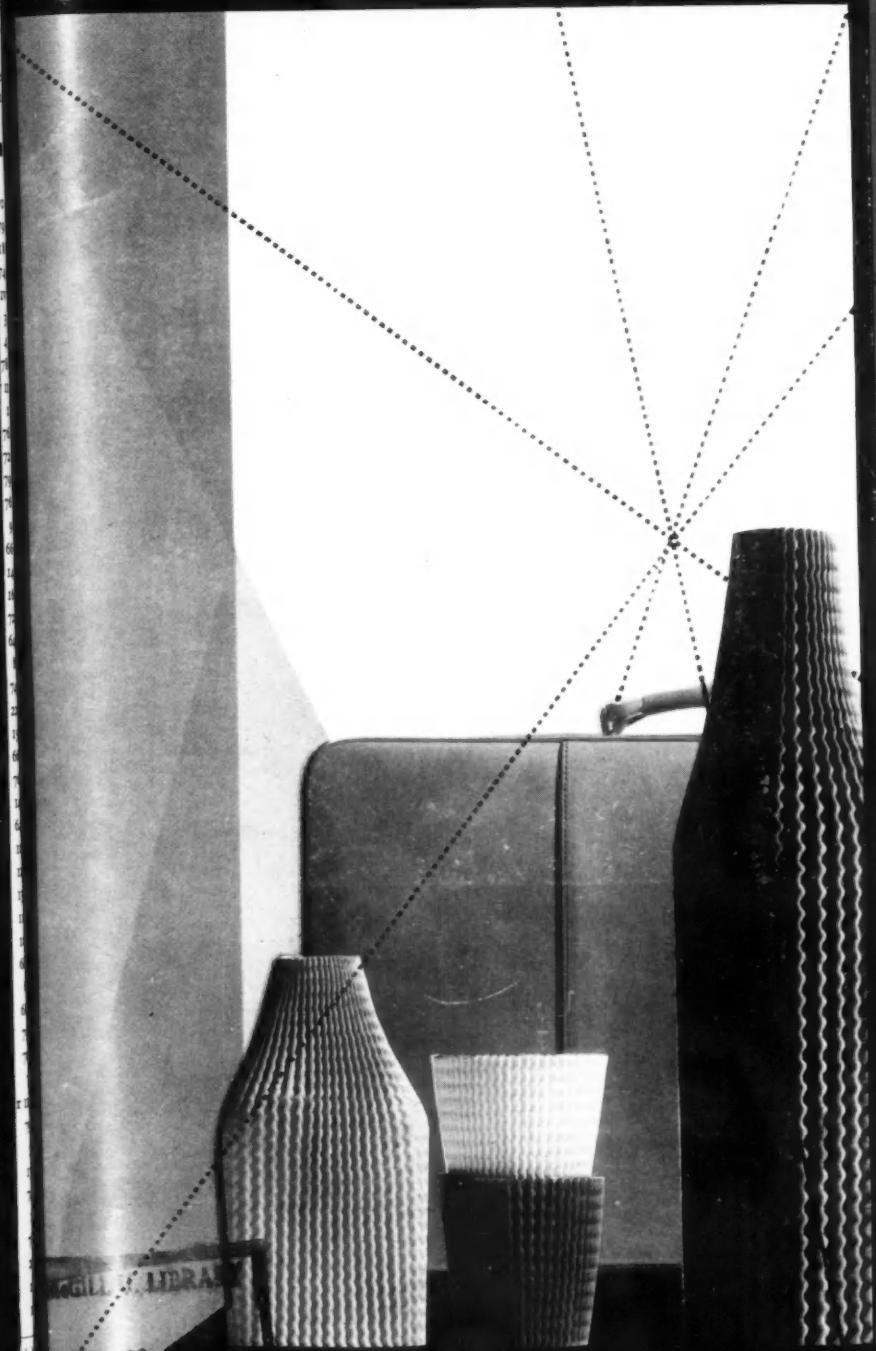


The Council of Industrial Design

May 1957 No 101 Price 3s

Design



Art + Tech



BETWEEN TWO WORLDS

A window is a link – and a screen – between the outside and the inside worlds. Here, draped, for privacy, with a new type of open-weave net, and curtained with a lively printed crash, is a window which makes the best of both worlds. These lovely fabrics are from Old Glamis spring range.

Of special interest to interior designers is the new coarse net 'Clovelly' with a half-inch mesh, made in a natural finish and in six vivid colours. The curtain fabric is 'Bamboo', a printed crash with a two-colour design on a natural ground. It is made in five colour combinations. Both fabrics are 50 inches wide.



By Appointment
Makers of Old Glamis Furnishing
and Embroidery Fabrics to
H.M. Queen Elizabeth The Queen Mother.
Donald Bros. Ltd.

FROM ALL GOOD FURNISHING STORES AND DEALERS



Drum-liners made with Geon PVC protect solid or liquid goods from contamination by dirt, rust off chipped metal, and at the same time protect the inside of the drum from corrosion or rusting. 'Fablon' sheeting made with Geon PVC possesses all the well-known Geon properties: toughness, chemical inertness, and resistance to corrosion from acids, alkalis and petroleum products. The combination of these properties assures the arrival of goods at their point of destination in exactly the same condition as they left the factory. Wherever drum linings are required, specify flexible sheeting made with Geon PVC. For further information about Geon PVC write for Booklet No. 9 free on request.

'Geon' is a reg'd. trade mark



'Fablon' PVC sheeting made with Geon PVC by Commercial Plastics Limited. Illustrations show PVC drumliners being used for packaging Geon Latex at the Barry factory of British Geon Ltd.

BRITISH GEON LIMITED

Sales and Technical Service

DEVONSHIRE HOUSE PICCADILLY LONDON W1 · Telephone: MAYfair 8867



*In business,
creating
the right impression
begins with
having the right furnishings*

Write now for our new brochure "Interiors"

When furnishing at boardroom level, call in

HEAL'S CONTRACTS LTD

196 TOTTENHAM COURT ROAD, LONDON, W.I. TELEPHONE MUSEUM 1666

TODAY'S PROBLEMS IN INDUSTRY

Cutting Machining Time



In these days of competition both at home and abroad, machining time is a vital factor in maintaining competitive prices. It is expensive in labour and materials, and accounts for a considerable proportion of overall production costs. One way of cutting it to a minimum, however, is zinc die casting. Consider carburetors, for example. These are one of the first component parts for which zinc alloy die castings were regularly used, and as their design has become more and more complicated, die castings have proved themselves to increasing advantage. No other process allows such fast production of accurately held, complex shapes. Cored holes need only reaming or, where necessary, tapping; and the free machining qualities of zinc alloys make such operations easy and fast. Mating surfaces can often be used as cast. Justifiably this process is claimed to be the shortest distance between raw material and finished product.

Write for list of members and publications describing the properties and uses of die castings to:—

ZADCA

ZINC ALLOY DIE CASTERS ASSOCIATION

34 Berkeley Square, London, W.I. Telephone: GROsvenor 6636



The Design Centre's first year

will be marked by a special display



DESIGNS OF THE YEAR

from 11th May to 12th June for which

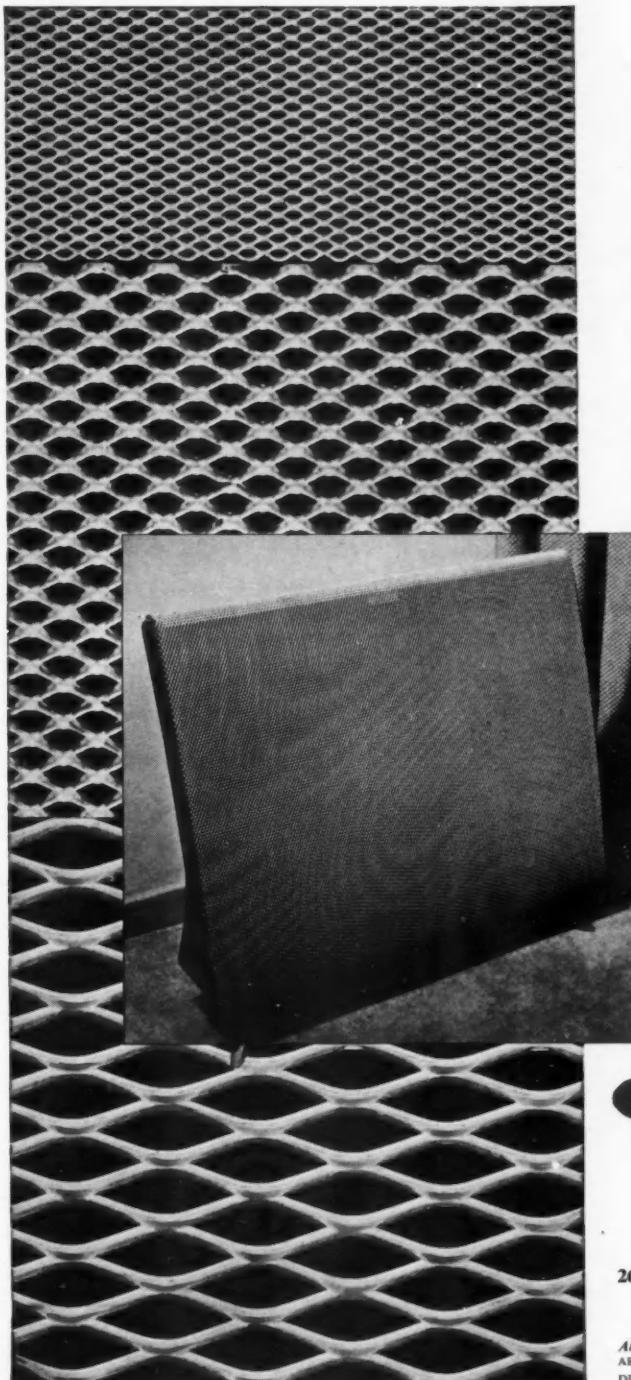
THE FACULTY OF THE ROYAL DESIGNERS FOR INDUSTRY

have selected 12 products of outstanding design
exhibited during the Centre's first year



THE DESIGN CENTRE

Council of Industrial Design
28 Haymarket, London, S.W.1



Expanded Aluminium *unique in metal fabrics*

The range of shapes and sizes of meshes in Expanded Aluminium is unique in metal fabrics. Its surface sparkle and texture, especially when colour anodised, is unusually attractive and it is a decorative yet practical material for many applications.

Expanded Aluminium is light, flexible and versatile and widely used in the electrical, radio, furniture, vehicle, aircraft and many engineering industries, as well as for display.

This electro-static loudspeaker, the first of its kind in the world, is one example of the many uses of $\frac{1}{2}$ " mesh Expanded Aluminium.

Courtesy of The Acoustical Manufacturing Co. Ltd., Huntingdon.

Expamet

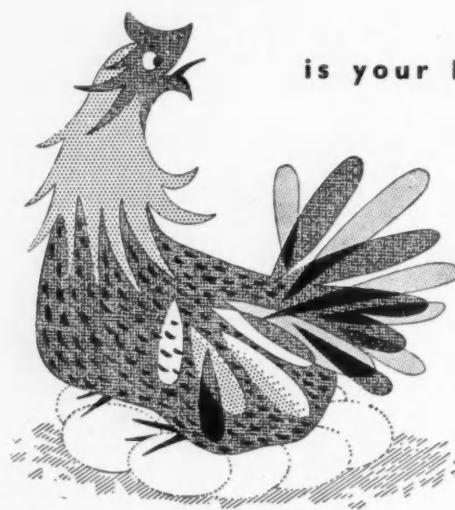
Expanded Metal Products

**THE EXPANDED METAL
COMPANY LIMITED**

26 Burwood House, Caxton St., London, S.W.1
Tel. ABBey 7766

Works: West Hartlepool

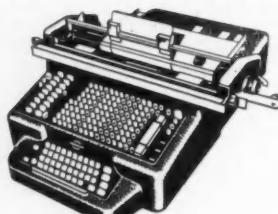
Also at:
ABERDEEN • GLASGOW • BELFAST • BIRMINGHAM • CARDIFF
DUBLIN • EXETER • LEEDS • MANCHESTER • PETERBOROUGH



is your business

well established
... or
just beginning?

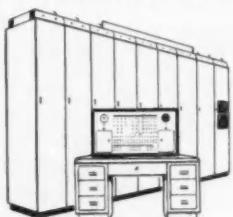
WELL-ESTABLISHED concerns with time-honoured procedures are often as much in need of modern, time-saving systems as little businesses, newly launched. That is why National accounting machines have won their way everywhere into offices of every conceivable size and kind. *With over seventy standard comprehensive and "specialist" models from which to choose, the sheer breadth of National's all-modern range, protects you from over-investment: for less than £70—and upwards into the thousands—there are Nationals for every office, irrespective of scale or scope.*



All-Purpose ACCOUNTING MACHINES



'Small Office' BOOKKEEPING MACHINES



Demonstrations
by arrangement



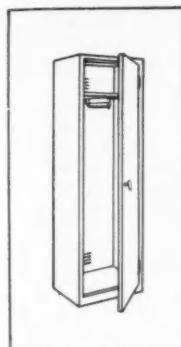
DIRECT-ENTRY
Accounting and
Adding Machines
over Seventy
standard models alone

ACCOUNTING BY NATIONAL-ELLIOTT ELECTRONICS

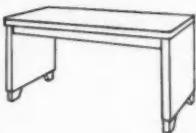
By using National Accounting Machines as the means of originating data (in the form of punched tape) for input into the National-Elliott 405 DATA PROCESSING COMPUTER, conventional records printed in normal characters are produced, simultaneously, at the "point of original entry". Thus, on the spot action at branches, depots, sub-offices and separated departments can be progressed on the basis of immediately accessible information provided by their own, self-proved records.

* By agreement, The National Cash Register Company Ltd. is now responsible for the marketing and installation of the Elliott 405 business data processing computer.

THE NATIONAL CASH REGISTER COMPANY LTD., 200-216 Marylebone Road, London, N.W.1 PAD 7070



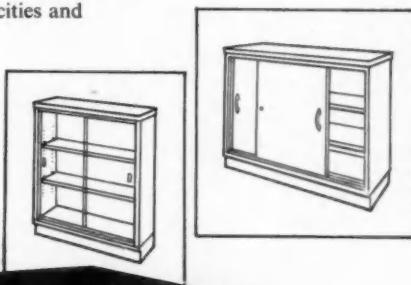
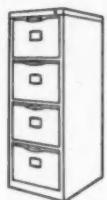
Introducing not just a desk . . .



... A COMPLETE SUITE

If you wish your office to look impressive as well as efficient, the new 400-Style Suite is the answer. A basic design of exceptional merit has been adapted to a full range of complementary units. Varying desk capacities and facilities may be provided for each member of an organisation whilst maintaining harmony and dignity throughout the furnishing scheme. Immaculately styled, with many interesting features, and built to engineering standards, the 400-Style Suite marks an important advance in the fitting-out of business premises.

Please ask for Brochure DN 999.



400-Style Double Pedestal Desk

400-STYLE
a matching suite of office furniture in steel

HARVEY

G. A. HARVEY & CO. (LONDON) LTD., WOOLWICH ROAD, LONDON, S.E.7

GREenwich 3232 (22 lines)



the world of fashion at your feet



Caged birds sing sweetly, but ideas imprisoned in dull print have an indifferent song. We and our artists give your words imaginative release in a harmony of design and typography. Our subtle exploitation of technical resources is shown in this Eric Poncy drawing. Working from Geneva he is one of our artists on the Continent who designs exclusively for us in this country. Migration to foreign markets will present no difficulties and your winged publicity will find a welcome resting place.

BALDING & MANSELL DESIGNER-PRINTERS FOR HOME AND EXPORT

3 Bloomsbury Place, London, W.C.1 Telephone: Langham 6801

DESIGN magazine is printed by Balding & Mansell at their factory at Wisbech, Cambridgeshire



Robin Day designs

Chairs

for all requirements

Write for prices and further information

We have wide experience of contract work
and of collaboration on interior schemes.



Showrooms

Hille of London Ltd 39-40 Albemarle Street London W1 HYDpark 9571

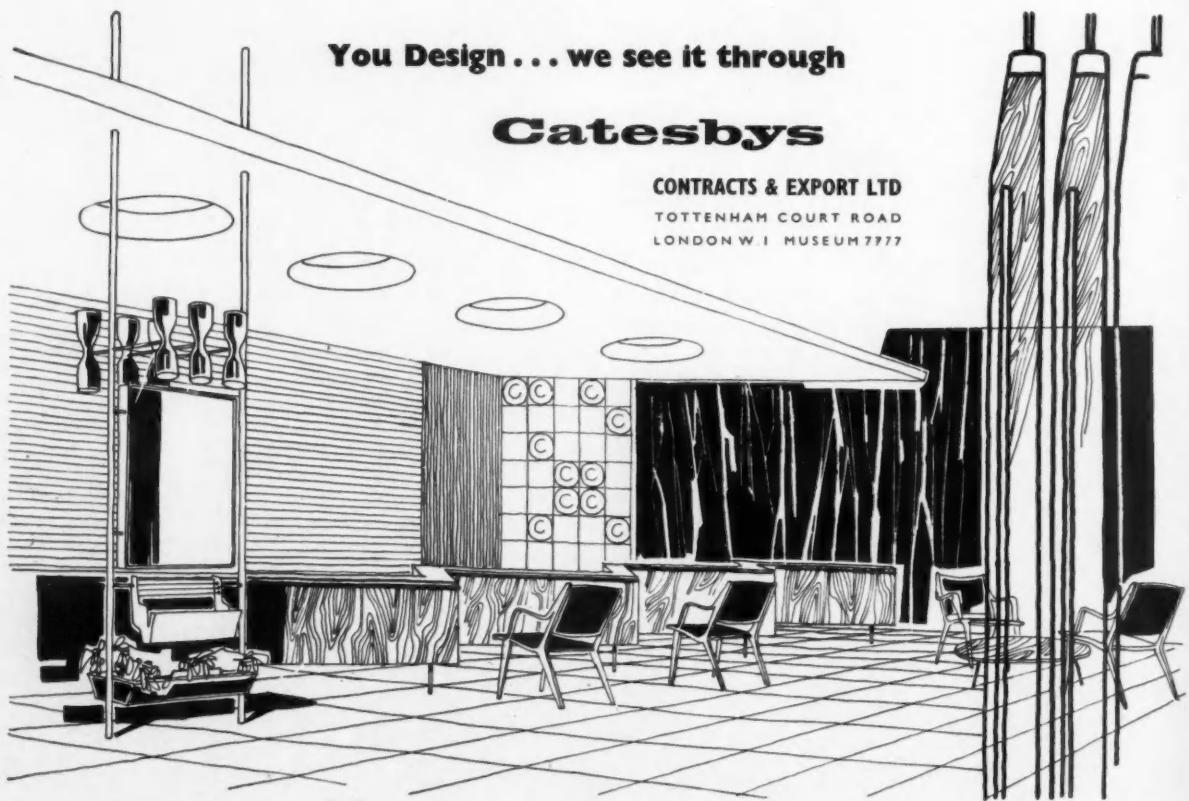
Hille of London (Midlands) Ltd 24 Albert Street Birmingham 4

You Design... we see it through

Catesbys

CONTRACTS & EXPORT LTD

TOTTENHAM COURT ROAD
LONDON W1 MUSEUM 7777



TIBOR

"Sunburst"—one of Tibor's latest Textureprint range of screen printed designs on satin-faced cotton. Other designs like "Niza", "Palermo" and "Gondola" are available in exciting colourways to blend with Stockwell carpets and Tibor deep texture upholstery fabrics. Produced by: Tibor Ltd., Stratford-on-Avon.

VESPER

This elegant Easy chair model 424 designed by N. K. Hislop has Sycamore finish legs, latex foam cushion and is upholstered in Tibor's latest "Seville" deep texture fabric, which is available in 10 new shades. Produced by: Gimson & Slater Ltd., Walton Street, Long Eaton.

stockwell

Carpet: Equerry (regd.) wilton filling in design "Caserta" created by Tibor Reich, F.S.I.A. Stock-colouring: Black Persimmon. All-woollen Pile. Guaranteed mothproof for life. Produced by: S. J. Stockwell & Co. (Carpets) Ltd., 16 Grafton Street, London, W.1.



MR MASERE'S FIRE ESCAPE



Mr. Masere's fire-escape, a machine for escaping from windows when houses are on fire, seems well adapted to its purpose. Persons who purchase these machines should have a very strong iron hook fixed to some secure part of the window frame; on this hook the suspension iron is hung when anyone wishes to descend from the window.

The first operation is to step into the lower belt with both feet and draw it up to form a kind of swing to sit in; the part of the strap which is through the buckle is laid hold of with the left hand, and the buckle, with the right hand, is slipt to its proper place; the tongue is then put into one of the holes, as in buckling common straps. The upper belt is loosely buckled round the chest, and the rope on the roller thrown out of the window on the ground.

(Adapted from Rees's Cyclopaedia, 1820.)

Today, the prevention and control of fire, a constant concern of us all, is helped in large measure by the efforts of the chemical industry. I.C.I. supplies, for example, 'Pioneer' gypsum plasterboard, a fire-resistant building material; aluminium-coated fabric for heat-resistant clothing; sodium bicarbonate and sulphuric acid as ingredients in fire-extinguishers; 'Terylene' for ropes and hoses; polyvinyl chloride for hose linings and 'Alkathene' for piping used in fire-fighting and for emergency water supplies. I.C.I. non-ferrous metals, too, are used for many of the metal components in fire-fighting equipment.



Number 101

May 1957

Design

CONTENTS

EDITOR Michael Farr

EDITORIAL ADVISERS Sir Gordon Russell

Alister Maynard

Paul Reilly

J. Noel White

Peter Hatch

ART EDITOR Kenneth Garland

ASSISTANT EDITOR John E. Blake

EDITORIAL ASSISTANT Gillian E. Naylor

PRODUCTION Aubrey Hewitt

STAFF PHOTOGRAPHER Dennis Hooker

BUSINESS MANAGER Arthur Sudbery

15 The wider outlook

16 What about this?

18 Theory into practice L. Bruce Archer

The articles on design and stress analysis have created wide interest. The author now takes specific products for detailed study and his researches imply that the technique would be beneficial to a extensive range of goods

24 Three sides to whisky René Elvin

26 Travel goods Gillian E. Naylor

A discussion of the developments in luggage design which have taken place since the war and the ways in which manufacturers have met the challenge of new forms of travel and changing social conditions

32 Rich choice at the right price Wyndham Goodden

34 The standpoint of perfection John E. Blake

Pruners of high quality are the latest result of a forward looking design policy developed several years ago by a manufacturer of garden tools

37 Protective textures

A British company is producing 'Carbion', a new kind of protective packaging with decorative possibilities

38 Transition in furniture Bernard McGaughan

Three firms have been chosen to illustrate the trend towards higher design standards in the furniture industry - a trend which is reflected in the widespread acceptance of modern furniture

41 Home equipment on trial Dorothy Meade

The fourth in the series of articles on consumer needs discusses the opinions of several families on various products they had bought - or were unable to find - for their homes

45 Graphics in context F. H. K. Henrion

46 Stamps - British printer uses consultant designer Edgar Lewy

47 Overseas review

USA Aircraft interiors - a new approach
Industrial sweeper redesigned

Mid-West furniture Lazette Van Houten

55 News 59 Letters 61 Books

Manufacturers are invited to consult the Council of Industrial Design's

RECORD OF DESIGNERS

a free service of recommendation and introduction of designers to industry

Names and addresses of manufacturers included in this issue are on page 61

Editorial Circulation Advertisements The Council of Industrial Design, The Design Centre, 28 Haymarket, London SW1 Tel: TRAfalgar 8000 AND The Council of Industrial Design Scottish Committee, 46 West George Street, Glasgow C2 Tel: Glasgow Douglas 3914

Design may be obtained from booksellers at home and abroad. Yearly subscription rate: UK 36s post free



young idea...

It is almost certainly true to say that every new aircraft which takes off on its maiden flight carries more—and more efficient—plastics components than its immediate predecessor. Especially may this be true in respect of the Plastics Industry's most recent significant contribution—structural mouldings. Even so, this young idea may be said still to be in its infancy. The problem of the polymer chemist, himself a relative newcomer in the aeronautical field, is to meet the ever more stringent demands of aviation development. In this endeavour the Plastics Industry is committed in the long-term sense, and none more fully so than the chemists and engineers of B.I.P.

B.I.P. Services

B.I.P.—makers of the highest quality polyester resins—offer the full resources of their Research and Development Departments in developing improved plastics materials and moulding techniques applicable to aircraft structures and components.

**Beetle
Polyester
Resins** 

B.I.P. Chemicals Limited • Oldbury • Birmingham • Telephone: Broadwell 2061

London Office: 1 Argyll Street • W.I • Telephone: GERrard 7971

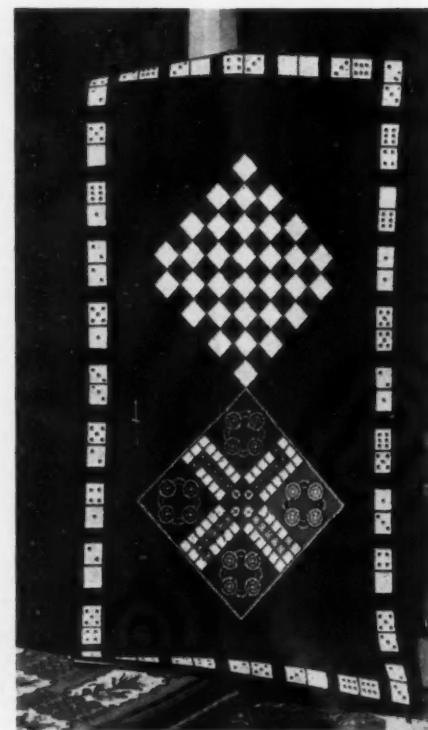
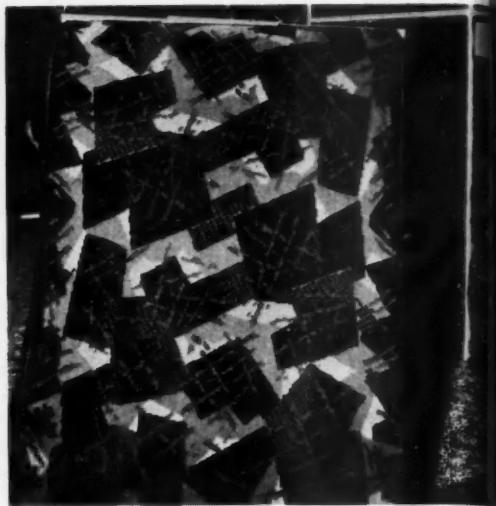
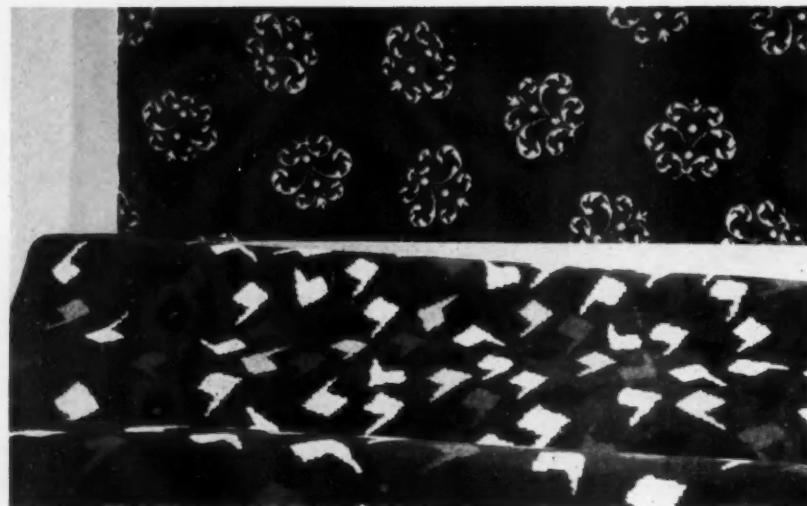
The wider outlook

THERE MUST BE MUCH SATISFACTION in becoming the acknowledged authority in some singular and untrespassed field; perhaps by isolating a rare anopheles peculiar to a distant province of West Africa, one can become an undisputed master of a small and narrow promontory of human knowledge. In a less exalted sphere it might even be gratifying to be the sole surviving practitioner of an ancient craft; a flint knapper in the East Anglian hinterland or a butter pattern maker. No doubt the slim market for butter patterns is confined to the few people who still feel that the best butter is even better if time and patience are spent in adding decoration. Nevertheless to be the one purveyor of even the most esoteric product carries with it a cachet of distinction and invites the world to beat a path to your door.

But these comfortable confines of the super specialist can only be misleading to the generality who have to cry their wares in the market place; they neglect the wider context at their peril. It is excellent to know all, if that indeed is possible, about the manufacture of cutlery, but it is hardly wise at the same time to ignore what is going on in other industries making tableware. The new character of china, the lively patterns in napery, the style of modern glass are international forces with which the cutler must reckon if his designs are to be accepted. Nor can he be indifferent to the idiom of the furniture designer whose products will concern and even dominate his own. Still less can the maker of radio and television sets shut his eyes to the rising standards in furniture design, to which the recent 'Furniture Exhibition' drew the attention of the public and, we hope, the laggards in that trade.

The affinity of wallpaper to architecture is so close that it is hardly surprising that some pattern books now go a long way to create the kind of decorative interior which modern buildings demand. The carpet industry is clearly less conversant with the manners of the best modern architecture and the effect they are having on the refurnishing of buildings which are already middle-aged. Similar parallels can be drawn between a host of other industries, all of which influence each other and the customer, creating trends and predispositions in consumer choice. A lively curiosity in what other people are doing is healthy in industrial circles, if tiresome elsewhere.

For this reason DESIGN magazine surveys constantly a wide span of different industries many of which make products that may become closely associated after they leave their separate factories. This wider outlook can be of the greatest value to the manufacturer when he plans his production, or to the retailer who is trying to foresee what lines of merchandise he might be selling next season. DESIGN does not pretend to the esoteric honours of the specialist; we aim to give many industries, concerned with problems of design, the chance to see what their neighbours at home and abroad are doing.



Photographs by Sam Lambert

WHAT ABOUT THIS?

WE HAVE HAD A RUDE SHOCK. The first 'National Carpet & Floor Coverings Trade Fair' was held recently in London and one of its results are the photographs shown here. The few good quality modern designs are not included; they have either been illustrated already or the best of them will be shown in forthcoming issues. The fair could not claim to represent the carpet industry; many leading, large firms were absent and a high proportion of wholesalers - which do not originate designs - were installed side by side with manufacturers.

But, as the only fair of its type, its plethora of garish pseudo-contemporary design must be taken seriously, though it was evident that few manufacturers had done so. "Our designers have had a thorough course in 'contemporary,'" said one. Another explained that he would "play along while 'contemporary' is in," but he said he would welcome a return to chintz. Frequent remarks were heard about not giving this or that design "house-room", in spite of its best selling qualities. 'Contemporary', indeed, was the key word: one director said the term covered anything without a known tag. But, to visitors who turned away and mistily surveyed the hard core of 'Orientals' there was another shock in store: "Traditional patterns in 'contemporary' colours".

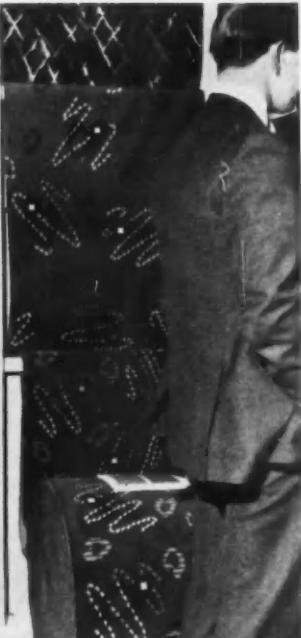
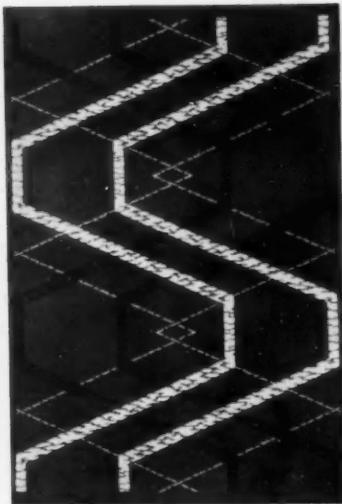
What can be done to check this cynicism? First, can the wholesaler be expected to stock good modern designs instead of the 'traffic-stopping' travesties of the one lively contemporary idiom? Second, will manufacturers give experienced designers who have been successful in related industries the authority to plan *ranges* of carpets and not rely so heavily on the piecemeal proposals of studio juniors? Third, the organisers of this fair could swiftly raise standards in the whole industry - and, incidentally, let future space to some of this year's absentees - if they arranged a prestigious exhibit of carpets independently selected for their excellence in design.

IS?

Trade Fair
own here. The
n illustration
air could n
absent and
installed side

design ma
one so. "O
ther explained
ld welcome
er that design
leed, was th
tag. But, f
als' there w

be expected
of the on
iced design
ages of carpet
Third, the
y - and, in
ged a presti



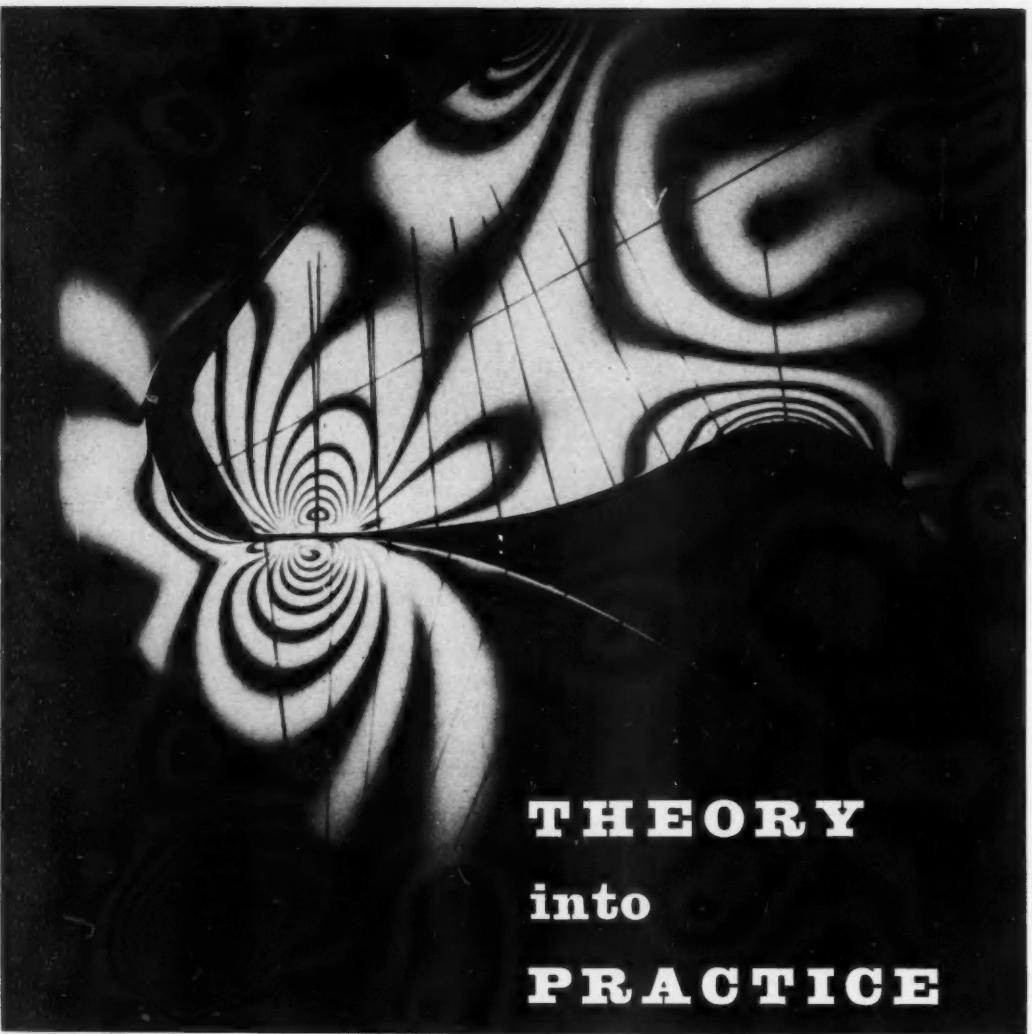


Photo-elastic stress diagram of bending fatigue test on a gear tooth. Courtesy: The Institution of Mechanical Engineers

THEORY into PRACTICE

DESIGN AND STRESS ANALYSIS 5

This series of articles makes out a case for the adoption and adaptation of more advanced methods for the purpose of giving the designer of everyday products, such as durable consumer goods, a more certain knowledge of the limitations within which he must work. The author has pointed out that other members of the industrial team - in particular, the production engineer - have seized upon the discoveries of modern science in order to improve their methods and advance their calling. High speed photography, nuclear radiation, electronics and other techniques, which until recently were expensive scientific wonders, are all used in production planning and control. The result is that the production departments can support with a wealth of technological argument each of the many demands which they make upon the designer. In reply to these demands the product designer can produce very little material evidence with which to defend the counter claims of other design considerations. It is the author's view that the time has come for product designers to take a leaf from the production engineer's book and to adopt certain simplified analytical techniques that were originally developed for more urgent applications. Some of these were outlined in September; the photo-elastic technique in particular was described in December. The following article shows how to put these theories into practice.

Previous articles in the series:

- 'Intuition versus mathematics' June 1956
- 'Design research' July 1956
- 'Analytical methods for product designing' September 1956
- 'Photo-elasticity for the product designer' December 1956

A short description of the photo-elastic technique

The photo-elastic method of stress analysis takes advantage of a phenomenon which occurs when polarised light passes through a transparent material. If the transparent material is put under load it has the peculiar effect of modifying the polarised light in direct proportion to the stresses which are present in the area through which it passes. The resulting effect is that the light emerges in zebra-like patterns of rainbow colours. These chromatic bands, known as 'fringes', can be seen in the illustration, left.

Photo-elastic fringes resemble contour lines on a map. All points on a given fringe are subject to the same stress, just as all points on a given contour are at the same height above sea-level. The closeness of the fringes indicates the steepness of the stress gradient. The number of fringes

occurring between any two points reveals the difference in stress between them. If the piece of transparent material is cut to the shape of a product and if the load is applied in a manner similar to the way in which the product would be loaded in service, then the pattern of fringes would reveal at once the location of weak points and areas of strength.

From the information thus derived the designer can learn many things. He can assess the strength of the design as originally set out. He can predict where failure is likely to occur and at what loads. He can specify the correct grade of material which will be required to stand up to service. He can eliminate weaknesses. He can judge the effect of proposed modifications. He can evolve the structurally ideal bones upon which to hang the flesh of refinements intended to make the product more effective, more beautiful, or easier to manufacture.

AS A DIRECT RESULT of the publication of the previous articles in this series, a number of firms have written to manufacturers of stress analysis apparatus, and a few have approached the author, with requests for advice and assistance in the application of analytical techniques – especially the photo-elastic technique – to their own particular design problems. The directness of this response suggests that two questions should be examined. Are these techniques *really* of any benefit in the designing of everyday products such as durable consumer goods? If so, why are they not more extensively used already?

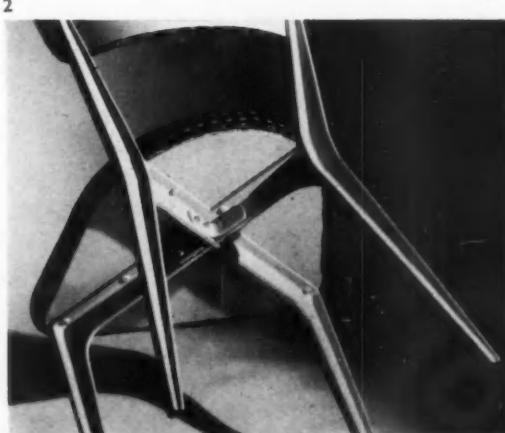
The first question must be answered by relating the additional knowledge gained by the use of analytical techniques to the cost incurred in the employment of materials, time, and extra intellectual effort. The previous article (December pages 42-46) described how, in theory, an analysis of the stresses which would occur within a proposed design might enable the designer to modify the form to make it exactly suit its function; to discover the minimum structural form which he must clothe; or to predict the ultimate strength of his design as it stands. This article discusses some actual cases where photo-elastic analysis might have been of assistance in the past and might yet be applied in the future.

Case 1 Ernest Race chair

There can be little disagreement over the view that the structural adequacy of a chair is of some significance. Nor can there be much argument that a chair is the better for being as light as its formal character and structural strength will permit. Consequently there is no need to justify the use of the photo-elastic technique in this case, except on the grounds of advantages gained in the elimination of structural weaknesses and in the identification of surplus material which might be shed if desired. Ernest Race designed the original BA3 chair, 1, in 1946 with the twin objects of exploiting the then excessive post-war capacity for aluminium casting



1 The original BA 3 chair designed and produced by Ernest Race in 1946.



2 The leg structure of the original BA 3 chair.

Theory into practice

and of avoiding the use of wood which was then subject to strict regulation. The frame of the prototype was made up from standard T-section and consisted of only two parts, each incorporating one front and one back leg. These two H-members were assembled to cross beneath the centre of the seat pan, 2.

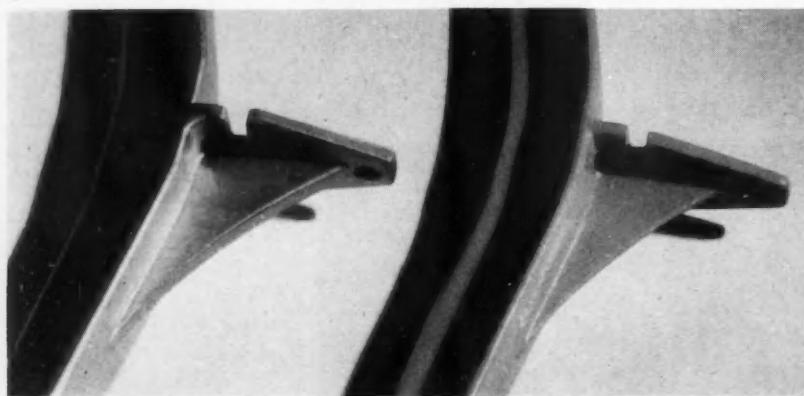
The design has since gone through a series of modifications at intervals until it is now an unusually sound structure. In its current form, 3, it is used on ship-board, including troopships - surely the most severe of all environments for furniture. The few breakages which do occur are so seldom located in any one place that an almost total absence of weak spots is indicated. This was not always the case, however. In earlier models the profiles and cross-sections contained some areas where the local stress concentrations were so high that plastic strain occurred, resulting in permanent distortion and the loosening of screws, or in fatigue and subsequent fracture. Undoubtedly they also contained areas which were too strong. The work of some investigators has shown that the presence of such areas of low stress can aggravate the weakness of areas in which the stresses are high. The programme of changes carried out on the BA3 included the progressive refinement of details as well as the strengthening of vulnerable points. Hence some of the credit for the soundness of the current model must go to the eye of the artist as well as to the judgment of the engineer. Nevertheless, in both adding and taking away metal Mr Race must often have wondered just how far he could or should go in the required direction.

3 The latest model BA 3 chair.

3



4



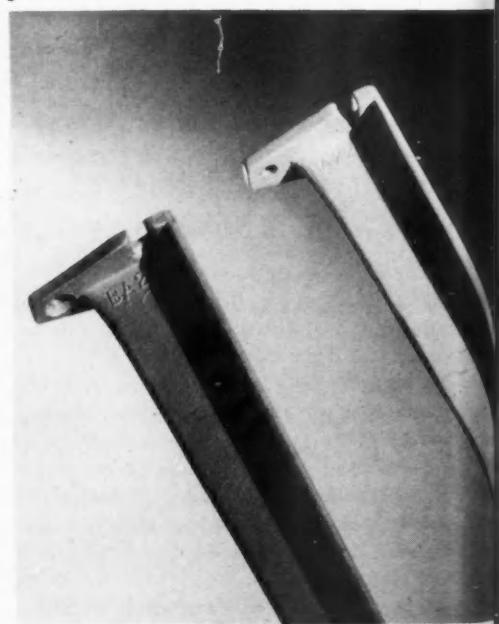
4 The latest (left) and an earlier version of the rear seat-bracket. Notice the larger fillet and web in the latest version.

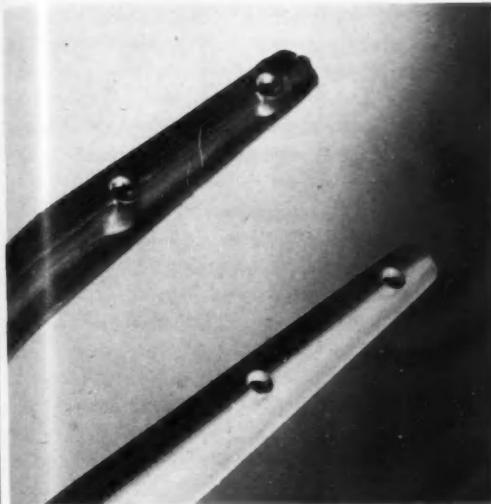
5 The latest (right) and an earlier version of the front seat-bracket. The counter-sunk screw hole has been eliminated, but the opportunity for sweeping the web out to join the under surface of the flange has been lost.

What would photo-elastic analysis have revealed? The stress-concentrations which were present at the junction of the two H-members in the original design would certainly have come to light. The weakness which existed just beneath the seat brackets of the legs of the second version would also have been seen. This portion of the leg, 4 and 5, is a typical subject for photo-analysis. The correct shape for the web and corner fillets would almost certainly be quarter-elliptical - a result very familiar to all workers with the photo-elastic method. In some cases the change from a plain radius to a quarter ellipse has been found to double the strength of a corner without adding a pennyworth of material. The weakness of the cross-section through the lower hole at the top of the rear leg, 6, might also have been revealed at the beginning instead of persisting as it did until the fifth revision.

As well as revealing these weaknesses, analysis would have indicated the presence of areas of low stress which might have assisted the designer in his desire to refine the profiles and reduce weight, 7. An adequate qualitative analysis by one man would probably have taken a normal working week. At the

5





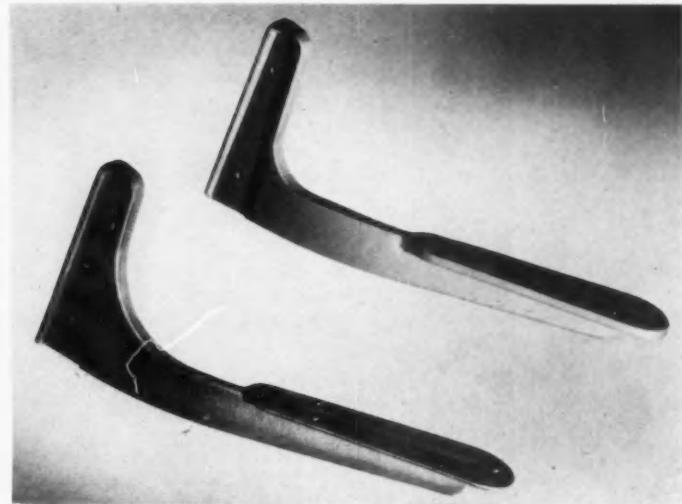
6 The latest (top) and an earlier version of the top of the rear leg: in the latter the lower of the two holes was a source of weakness.

7 The latest (lower) version of the arm-rest, now die-cast, compared with the earlier sand-cast version. A reduction in weight has been accompanied by an increase in strength through an improvement in the contour of the arm.

end of that time the elimination of the original weaknesses would probably have resulted in an improved design closely approximating to the current model of the BA3. In addition however, the designer would have known for certain just where he could have skinned off more of the metal if he had wished to do so. With a little more effort he could have determined the actual stress in pounds per square inch which would be present in the actual product at the points of maximum stress, and he could have chosen the least expensive aluminium alloy which had a permissible stress above that figure. The cost? An investment of £15 to £40 in apparatus plus £3 for sensitive materials. It is on this reckoning that Mr Race now shows considerable interest in a technique which might, at the beginning, have given him the refinements which took him 10 years to perfect, the hard way.

Case 2 Salter's scales

The spring actuated weighing machine is an interesting problem from the structural point of view. The spring itself must be highly stressed within the elastic limit in order to give a reasonably large but constant deflection under increments of load. The linkages transmitting this deflection to the pointer must not betray any significant extension or compression under load, because this would lead to errors of indication. At the same time these linkages must be light in weight, because the changes in their centre of gravity which occur at different attitudes due to changing loads could also affect the accuracy of the readings. The structure of the frame of the weighing machine must be robust, although there is some evidence that a little initial



8 The skeleton of the latest model BA 3. By a process of trial and error extending over 10 years, almost perfect structural details have been evolved. By means of photo-elastic analysis, the improvements might have been achieved right at the beginning.



9 A typical photo-elastic analysis of a corner fillet showing the perfect distribution of stress which arises from a quarter-elliptical fillet.

plastic deformation might help to spread the stress evenly over the structure. These principles apply equally to large industrial scales, to domestic weighing machines and to postal balances. George Salter & Co Ltd manufacturers all these types 10, 11, 12. The firm's design work is organised so that the act of designing is usually carried out on a working prototype rather than on paper. The experimental workshop and the drawing office are adjacent to one another. The prototype is made up by an experimental assistant to the sketches or verbal directions of the chief development engineer and the experimental foreman. After test modification and approval, the prototype is sent to the drawing office for the preparation of general arrangement drawings and details. The subsequent procedure

10



10 Salter 10lb commercial scale No 40 T.

11



11 Salter 10lb domestic scale No 59. Spring actuated weighing machines incorporate parts which must be highly stressed with elastic strain (the spring), parts which must be light in weight but not liable to stretch (the linkages) and parts in which some plastic strain may be of some advantage (the frame).

12



12 Salter 200 ton weigher. The ram's-horn hook and the links are of British Standard form, designed by photo-elastic methods.

includes the manufacture of six samples made to maximum and minimum dimensional tolerances, followed by 25 samples made on the production tools. This programme is remarkably well organised, and incorporates good statistical control over the effects of known variable factors and experimental error.

A new basis for teamwork

The direct-into-metal design technique has its disadvantages, however. The principal of these is that although the designs are always immensely practicable they are often aesthetically poor. Salter's has sought to overcome this by the employment of consultant industrial designers. On the whole, it has been disappointed with the results. Like other firms, it has found that most of the things which can be said of a proposed design are mere opinions, incapable of demonstration or proof. The objections which may be raised *against* a suggested form may be material enough, whether they are the production engineer's comments on the consultant's details, or vice versa. The arguments *for* suggested features are inevitably more ephemeral. Design sessions, in any works, tend to be mutually destructive with everyone telling everybody else what cannot be done. Nevertheless, there *must* be occasions when a particularly tricky production problem should be purposefully tackled in order to achieve some desirable design feature. The weighing of conflicting visual, mechanical and production considerations in the absence of positive evidence requires the judgment of a Solomon. Salter's chief development engineer, A. H. Perry and its technical director, J. K. Bache are therefore seriously considering the adoption of photo-elastic techniques. On the evidence of photo-elastic models it should be possible to evolve the correct functional shape for all the components of a design. The effects of any proposed variation, whether for production or aesthetic reasons, can be assessed with much greater confidence. Weight can be cut down, if desired, and weaknesses eliminated.

The photo-elastic technique has a particular appeal for Salter's, because it resembles practical model-testing rather than paper and pencil theorising. It could be incorporated into the existing design procedure without any difficulty. The first stages of design development would probably remain as now. On completion of the first prototype, however, photo-elastic models could be made of some or all of the components. The person responsible for photo-elastic analysis could then take fringe photographs of the stress distribution in the parts as originally designed. He could then trim the profiles of the parts until the ideal shapes were revealed. With this information before them the design consultant, development engineer and production engineer should be able to reach firm decisions, with the opportunity of obtaining quick and demonstrable information on the effect of any proposed modification which might then be put forward. If Salter's decides to adopt the technique the firm can be relied upon to pursue a well organised experimental programme with little left to chance.

Practical analysis for consumer goods

In the two cases which have been considered the structural aspects of the designs were of vital significance. Adequate strength and minimum weight are not always so obviously desirable. Nevertheless, it is difficult to find in the durable consumer goods field an example which does not exhibit *some* structural significance. A simple saucepan involves the support of a ponderable weight at the end of a cantilever. The design of the root of the handle requires considerable thought. How many designers of saucepans have wished that they really *knew* how effective various forms might be? This is an ideal case for photo-elastic analysis. In general, it can be shown that if the form, quality of material or thickness of section is in doubt, then the photo-elastic technique will probably provide an answer. This brings us to the second of the two questions which were posed in the opening paragraphs. If the photo-elastic technique is really of so much benefit in the designing of ordinary products, why is it not being used more extensively at present?

One reason is that almost all the research into and application of the technique has been conducted by people working at a high technological level. Photo-elasticity is generally studied by post-graduate students in the universities and post-advanced students at colleges of advanced technology. Many of the papers published on the subject were written for the purpose of gaining a PhD or a professional qualification. In industry, it is mainly the aircraft and aero-engine firms which have adopted the technique, usually employing a well qualified research man to operate it. The literature on the subject is therefore generally of an advanced character. Relatively few people are familiar with the technique, and the greater number who have heard of it imagine it to be an obscure and academic subject.

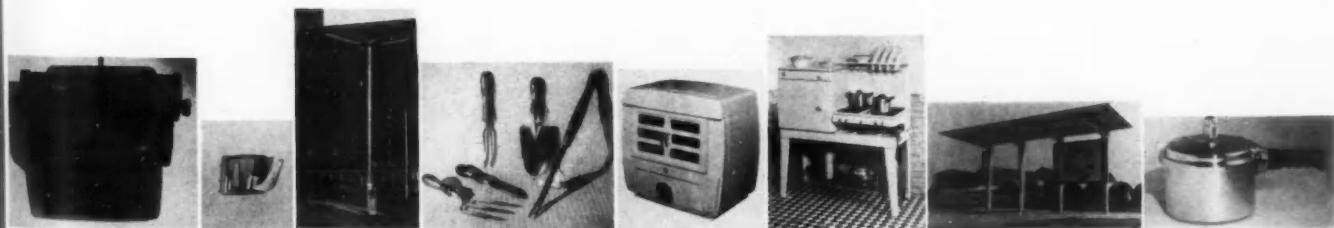
A second reason is the high cost of a standard polariscope. The sort of instrument which is used in the universities and research establishments is a

sensitive machine also capable of being used for many other experiments concerning the phenomenon of polarisation. It costs several hundreds of pounds. A simple one-purpose polariscope suitable for the analysis of ordinary products need only cost between £15 to £40. This is not widely appreciated, however, and the sight of a laboratory polariscope has frightened many an engineer away from the subject for ever.

A third reason, arising out of the other two, is the rarity of any examination of simplified techniques in the less academic technical journals. Consequently, the overwhelming majority of designers and development engineers have either never heard of photo-elastic analysis, or they have dismissed it as a technique unsuitable for ordinary design purposes.

These misgivings are unjustified. Dr R. B. Heywood, now at the Royal Aircraft Establishment but formerly of Rolls Royce Ltd, is the foremost advocate of the art of designing by photo-elasticity. He has done much to render the technique simple enough and the apparatus inexpensive enough for it to be used in design and development departments. Ernest K. Frankl, lecturer in engineering at the University Engineering Laboratories, Cambridge, agrees that a qualified designer should be capable of operating the technique, and suggests that he would soon begin to recognise the fringe patterns typical of various conditions. However, Mr Frankl thinks that certain conditions should be observed. One man should be made responsible for photo-elasticity in a given office, and this man should be sufficiently instructed in the technique to know when to take the problem to an expert.

Such experts can be found, mainly at the universities, technical colleges and research establishments. Almost all of them would be willing to give advice and assistance. Now it only remains for one or two imaginative manufacturers to give a lead in putting these well developed theories into practice. The *technique* of designing should then take a great stride forward.



Typical opportunities for stress analysis

The correct proportioning of cross-sections and the selection of grades of material to withstand the loads to be imposed upon them enter into the design of every type of product. In the majority of cases in the past the designer has relied upon intuition and the lessons of experience to suggest the limitations within which he must work. In the case of the roadside shelter, every part of the form is essentially structural. Greater strength with less weight would probably be attainable by the use of photo-elastic analysis, which might also suggest interesting contours. The robe hooks are the same problem in miniature. In the typewriter lightness is required in the moving parts for dynamic reasons. The weight of the whole machine must also be kept as low as possible. At the

same time very heavy loads are imposed at some points due to the high ratios of the levers used in the linkages. The contours of components, sheet metal thicknesses and quality of materials could all be determined accurately and quickly by photo-elastic methods. The pressure cooker, street lighting column and gardening tools have contours which are largely prescribed by their working loads. The cooker and the stove contain many parts which are subject to heavy cantilevered loads and work in a trying environment in which temperature gradients and corrosive agents play their parts. There are few components in any of these types of product which could not be more confidently designed with the aid of analytical methods.

Three sides to whisky

RENÉ ELVIN

Sam Lambert



Old and new bottles for 'Grants' whisky. BELOW, left, the final triangular plaster model followed by a hollow 'Perspex' prototype with a variable bottom. The shoulders were modified to ensure that the top of the liquor rises behind the metal foil capsule.



Sam Lambert



TO THE EARNEST DRINKER, whisky in any bottle would smell and taste as sweet. Or so the layman might think - but it is a facile and superficial view. As every conophile knows, tradition prescribes, not without due cause, glasses of a certain shape and size for certain types of wine; and the slim bottle of hock is recognisable at a glance, as is also the paunchy, straw covered flask of Chianti. In somewhat the same way, each distinct brand of the stronger spirit that is Scotland's national drink would, ideally, require a container instantly and indubitably proclaiming its contents.

However, the number of commercially and industrially practical bottle shapes is limited and not even sufficient for the major distillers and blenders, let alone for the hundred distilleries in Scotland and their 3,000 different blends. After the ordinary round bottles favoured by Buchanan and Dewar, the square ones used by Johnnie Walker, the dimpled peardrop of Haig, or the flatter pocket size, only the triangle remained. How was it that no one had thought of it before? Was it too difficult to manufacture? However that may be, the merit of having found the solution to this problem belongs to Hans Schleger, who has evolved for William Grant & Sons Ltd a triangular bottle of such basic simplicity that it would seem to have been not designed but discovered.

Obviously, it was designed, by methods of analysis and from within the problem, in conjunction with the glass makers. In the first place, Mr Schleger felt that the usual round bottle, beside lacking distinction, is not really very practical: it is not particularly easy to hold and is wasteful of space in packaging. The sphere has the same disadvantages in even greater measure. The square shape was already pre-empted by another well known brand of whisky.

There remained the triangle. It was not only new as a bottle shape, but also well suited to a slippery glass object: it can be clasped firmly in the hand. Mr

Schleger proceeded to design the new model as he would a piece of sculpture, making one clay model after another. An accurate prototype was constructed in 'Perspex' to simulate the finished bottle in shape and content. The glass makers found no difficulty in manufacturing the new bottle and were able to produce it at about the same price as the old one.

The triangular bottle pours well, is slightly taller than the average whisky bottle, and the glass is clear, which allows the amber colour of the liquor to shine through with the proper glow. The capsule has been redesigned and now bears at the top the decorative ensign armorial confirmed by the Lord Lyon King of Arms in Edinburgh to William Grant & Sons Ltd, as well as the slogan of the Grant clan: 'Stand Fast'. The firm's signature on the side confers on the packaging the conventional seal of authenticity.

At the express wish of Grant's, the label has been only very slightly modified and remains essentially what it has been since the turn of the century: a cluttered design with a superabundance of text. Perhaps a new label directly related to the triangular shape could be introduced at a later date.

The new bottle was launched with a flourish of Press and outdoor advertising. The first posters were 'teasers' devised by Mr Schleger, showing only three bold brush strokes in red and yellow 'Day-glo', forming roughly a triangle and thus guardedly heralding the new bottle shape. They attracted a good deal of puzzled attention. The reaction of the public to the new bottle seems to have been favourable. Indeed, the firm has had a fan mail, including a post card: "Thank you, Mr Grant, what a lovely bottle in which to put a ship!" But, so far, it has been used only in the home market; the real test may come when it is launched overseas, especially in America, which in 1955 received half of the 16 million gallons of exported Scotch whisky.



In this 'Day-glo' poster by Hans Schleger the triangular shape was subtly suggested before the bottle was introduced.

TRAVEL GOODS

GILLIAN E. NAYLOR

Although travel goods have frequently been featured in DESIGN this is the first full length survey of the industry. The article describes how the requirements of modern travel and the introduction of new materials provide fresh opportunities for the luggage designer.

John Garner



THE TRAVEL GOODS INDUSTRY in Great Britain has never been so flourishing as it is today; expansion has been rapid during the past few years and exports are rising. But the fact that more and more people from every income group are travelling each year has brought special problems, and an entirely new approach to luggage design has developed since the war. The increase in air travel and the decline in the use of leather have also contributed to this change.

During the course of this survey I spoke to executives of six of the more well known firms, representing a cross-section of the industry. With four of these firms production was devoted almost entirely to cases with fabric and imitation leather coverings; one produced about 50 per cent leather goods and the sixth made leather goods only. All the manufacturers I met spoke of rising sales on the home market and abroad, and the change in their approach both to the appearance and to the construction of luggage since the war.

The manufacturer's first consideration in the design of a case today is lightness; the demands of air travel and the fact that people tend to carry their own luggage when they go on a journey have made this essential. However, strength must not be sacrificed, and some of the lighter luggage has not stood up to the strain of modern travel. Air travel is especially hard on a suitcase, and the extremes of temperature necessitate the use of specially prepared adhesives. Most manufacturers are tackling this problem now and BOAC has recently started a flight testing service in which manufacturers can participate. Samples of luggage are flown all over the world by BOAC officials and if they stand up to the normal wear and tear of an air journey they then receive the BOAC's 'Flight-tested' label which manufacturers and retailers can use in advertising material.

Materials and construction

Much research has been carried out to obtain materials which are strong and durable as well as light. The cheaper cases are made from a fibre board structure with a metal frame; plywood, reinforced with strips of metal, however, which can be very strong and durable, is still the material most widely used. A few manufacturers are now using a framework of duralumin, an aluminium alloy which combines strength and lightness; cases with this type of framework are so far probably among the strongest on the market. One of the most recent developments in Great Britain, however, is a moulded fibre case produced this year by Parker Wakeling & Co Ltd. It is made from two identical high pressure mouldings of resin impregnated cellulose reinforced with glass fibre. The shells are bonded under heat and pressure to a specially prepared vinyl coated fabric, and two aluminium alloy and

steel frames are built into the basic structure so that when the case is closed the halves fit closely together. The method of producing this type of moulding was described in the article 'A future for moulded pulp?' by F. C. Ashford (DESIGN January pages 43-7); the addition of glass fibres gives greater strength. This type of luggage has already been seen on the American market and there is no doubt that much more of it will be produced in this country during the next few years, since the material is both light and strong, and allows the designer freedom to experiment with new shapes.

Better covering fabrics needed

Each year fewer leather suitcases are sold on the home market. Leather is an expensive material and must be worked by skilled craftsmen; when a leather suitcase leaves the manufacturer the retailer's profit and the high rate of purchase tax make it a costly item. Those produced today, however, bear little resemblance to the heavy pre-war product. Thick, heavy leather is no longer used, and leather cases are now often as light as those in other materials. Coach hide is the covering most used, on a framework of plywood or aluminium alloy. Although sales are low on the home market the demand for the British leather case abroad continues to rise, and the manufacturers quoted America, Canada, France, Belgium and Scandinavia as being their chief export markets. On the whole manufacturers were confident that if purchase tax were reduced the sale of leather suitcases on the home market would rise significantly.

Public demand generally makes it worth-while for the manufacturer to devote a certain percentage of his production to the imitation leather case. There are however, a variety of other finishes available on the market. Those that are cotton or canvas based are most widely used; the fabric is cellulosed or treated with plastics leaving either a hard shiny surface or a rough texture. The suitcase is then reinforced at the corners and along the seams with contrasting material, leather or imitation leather. These finishes seem more honest than the attempts to imitate leather which no matter how well produced, can never entirely deceive. However, these fabrics are often uninspiring and too much of this type of luggage is clad in a uniform of small checks. No manufacturer I met had fabrics specially designed for the purpose, and most choose them from standard ranges of firms producing plastics coated fabrics. There is no doubt that more interesting effects would be obtained if manufacturers would commission new designs from the firms making these fabrics.

Colour, shape and fittings

Another recent development is the growing popularity of coloured luggage. One retailer summed this up when he described his display: 'Five, even four years ago brown and black suitcases would have predominated in this department; now people are anxious for colour and change.' Manufacturers are producing blue, red, and pastel coloured suitcases in both leather and synthetic finishes. Suites of matching suitcases

¹ The basic shape of this case is determined by the wrapped round plywood strip supported on two steel frames, forming a rigid structural carcass. This is covered with coach hide, and the sides of the case, in a PVC coated cotton fabric, are unstiffened. DESIGNER A. Lee. MAKER Barrow Hepburn & Gale Ltd. £8 10s 6d.



John Game

2 Designed for air travel and hard wear, this case has a carcass of duralumin rolled at the edges and reinforced at the corners and under the handle with the same material. The handle is riveted to the metal structure and the leather bands on the front of the case enclose two strips of spring steel which give strength to the semi-stiffened fabric - a cellulosized whip cord canvas.
DESIGNER J. W. Waterer. MAKER S. Clarke & Co Ltd. £25 6s.

have now largely replaced the huge wardrobe trunk, and these are designed with the ensemble in mind. The problem of storing five to eight suitcases in the minimum of space has been solved by those firms producing ranges in which all the suitcases fit into the largest of the suite. One firm has introduced a collapsible suitcase which packs flat in an envelope for storage.

There have been various modifications to the traditional oblong box shape of the suitcase. Many models have soft tops and rounded corners, and some manufacturers produce a suitcase with the sides tapering towards the top, usually made of two identical shells of moulded plywood which open flat for packing. This type of case is easier to carry than the traditional shape, but there is some loss of packing space. Square cases have also been introduced, again with two halves opening flat to facilitate packing.

The case fitted with coat hangers and various compartments for easy packing was well known in England before the war, and is still popular today. One recent development of this idea is the wardrobe case usually made of fabric, which unzips to open flat and can be hung up with the clothes packed inside. The tendency

now with some manufacturers, however, is to do away with these fittings in the interest of lightness, especially in the larger suitcase.

Some years ago it seemed that the introduction of the zip fastener would solve the problem of closing a case neatly and firmly. But although most firms still make cases with this type of fastening, manufacturers have found that it is not an ideal solution, as the zip can easily be strained and misused. Very few manufacturers have locks specially designed for their ranges, as this involves paying the locksmiths' initial tooling costs. Some of the locks produced today are of a high standard, but many cases even in the more expensive ranges still have locks of indifferent design and finish.

Opportunities for the designer

Five or six new 'lines' ranging from different colour combinations to entirely new designs, are introduced each year by the majority of firms. However, few manufacturers employ a designer, and new designs are usually the result of collaboration between the directors and sales managers. The traditional sense of 'fitness for purpose' which is apparent throughout the industry ensures a reasonably high standard of design. But in



John Garner

3 This case is one of a range from a firm which specialises in leather luggage. The range has been designed so that all the cases fit into the largest for compact storage; it has a plywood carcass and is extremely light, this 24-inch model weighing 5 lbs. MAKER S. E. Norris & Co Ltd. £17 5s.

4 These cases have been designed for lightness, the largest (27 inches) weighing 5½ lbs; the plywood frame is covered by a hard wearing PVC coated fabric. The tan colour, however, suggests an association with leather which is contradicted by the glossy and pliable nature of the material. The lock position here is awkward and has been placed next to the handles in later models. MAKER S. Noton & Co Ltd. £5 9s 6d. (21-inch).



5 and 6 A tradition of fine craftsmanship ensures a high design standard in many leather suitcases produced today. Models such as these meet the requirements of modern travel, and at the same time retain the dignity of a traditional craft. 5 DESIGNER J. W. Waterer. MAKER S. Clarke & Co Ltd. From £25; 6 MAKER Papworth Industries. £20.

to do away
especially
production of
of closing
firms still
manufacture
as the zip
few manu-
their ranges.
initial tooling
are of a high
the expensive
and finish.

different colour
are introduced
however, few
new designs are
the direction
use of 'fitness'
the industry
design. But in

spite of the advances in recent years there is now a tendency towards a certain uniformity in British travel goods, due perhaps to the fact that there are so few luggage designers. Successful new shapes and new ideas are quickly copied so that it is often difficult to identify an individual firm's range in a retail store. The demand on the home market continues and exports are rising; but it can only bring harm to the industry if a few firms produce the new ideas, only to have them copied next year by the less enterprising manufacturer.

There is no doubt that the introduction of glass fibre and pulp mouldings for luggage provides fresh opportunities for the luggage designer, allowing him greater freedom of expression. The rounded corners and softer lines that characterise travel goods today can be further developed in these materials, and shapes with compound curvature can be produced offering scope for a new elegance in luggage that is more in key with other types of modern product design. Again, the high cost of tooling increases the difficulty of copying. Ideally the introduction of this type of luggage should enable the manufacturer to break away from imitation leather effects, and experiment with a more imaginative use of colour.

Travel goods

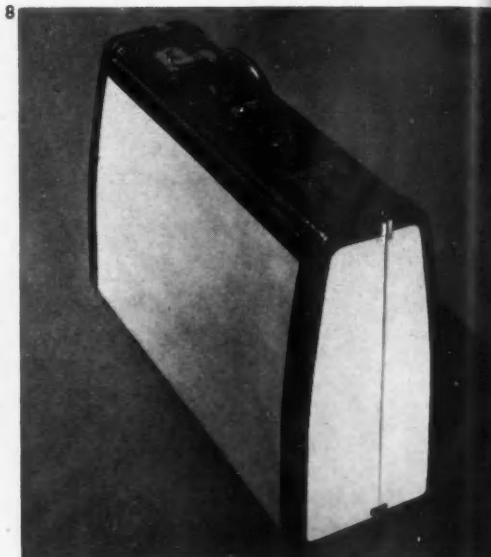
7 This type of case is new to the British market. It is made from two identical high pressure mouldings of resin impregnated cellulose reinforced with glass fibre. A vinyl coated fabric is bonded to the shells, and two aluminium alloy frames are built into the basic structure around the edges so that when the case is closed the two halves fit tightly together. The lady's model, shown here open, has a quilted rayon lining, the man's model a check cotton lining. MAKER Parker Wakeling & Co Ltd. £12 12s.



10 Much development of the soft fabric bag has taken place since the war. It has a lightness and resistance to damage which is more difficult to achieve in rigid cases. This wardrobe case opens flat for packing, and can be hung up with the clothes inside. MAKER P. Pell & Sons Ltd. From £6 15s.



8 The two halves of the case open flat to make packing easier; it is made of plywood and is covered with cotton backed PVC with leather reinforcements at the top and corners. The tapering shape, new to luggage since the war, has been designed for ease of carrying, and gives the case greater stability when standing on the ground. MAKER Parker Wakeling & Co Ltd. £15.



9 The need for an expandable suitcase was recognised as early as 1922 when the 'Revelation' lock and expanding fittings were patented. The clean appearance of this model results from the use of unbroken contrasting materials which define the planes of sides and edges. DESIGNER J. A. Hanauer. MAKER W. Wood & Son Ltd. £5 19s 6d. (21-inch).

11 and 12 Manufacturers have various solutions to the problem of storing cases when not in use. The suitcase on the left folds up and packs into the envelope for storage, and the range on the right has been designed so that the cases nest one inside the other. **11** DESIGNERS T. Cross and A. Lee. MAKER Barrow Hepburn & Gale Ltd. £5 4s 6d (20-inch); **12** DESIGNERS J. A. Hanauer and P. Schenkel. MAKER W. Wood & Son Ltd. From £4 19s 6d.

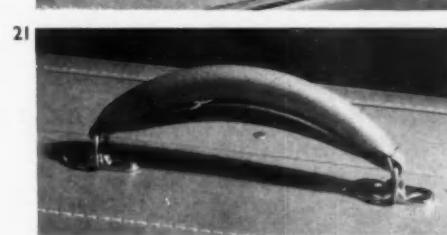
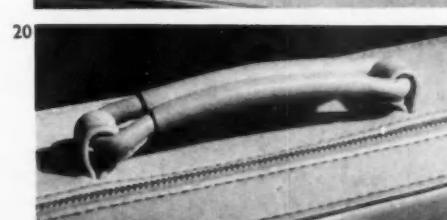
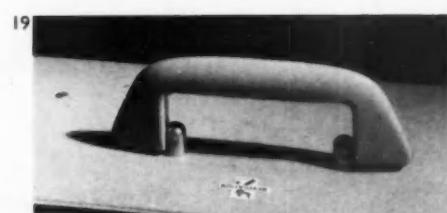
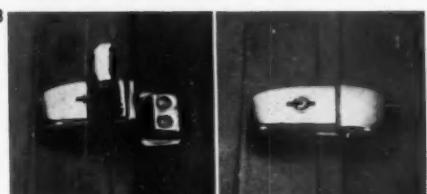
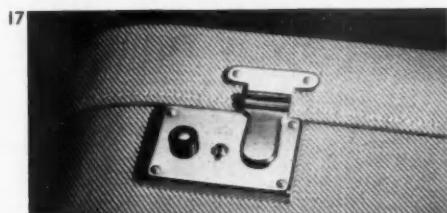
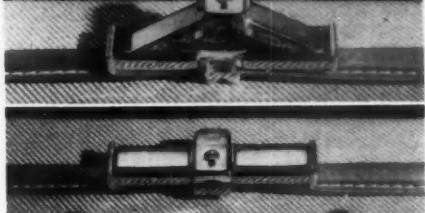
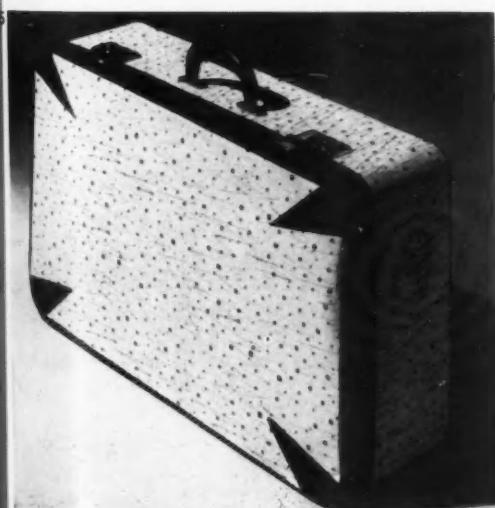




13 and 14 Two variations of the fitted suitcase: the lid of the case on the left can be detached and the two halves packed separately. The case below is in coach hide, and the fitments are detachable. The softly modelled shape is an original statement in a traditional craft. 13 MAKER Antler Ltd. £11 5s; 14 DESIGNER H. Piotrowski. MAKER Smith, Englefield & Co Ltd. £23 13s.



15 The lively pattern on this case is a welcome break from the conventional small checks of many fabric coverings. The jagged corner reinforcements, however, give a restless effect, and the appearance of the case as a whole would benefit if these were redesigned or omitted. MAKER Sinclair Owen Ltd. £5 19s 8d (21-inch).



LOCKS

Manufacturers rarely have locks specially designed for their ranges, since this involves paying the locksmithers' tooling costs. One exception is the 'Securex' lock, 16, which has been patented by S. Clarke & Co Ltd. This provides a new solution to the problem of closing a case neatly and firmly - a steel strip runs round the lid of the case, which is tightened by pressing down the locking device. In this way the lid is held tightly to the base along the entire edge, and is released by lifting the lever mechanism. Some improvements have been made among standard locks and two examples, 17 and 18, show refinements in shape and detail.

HANDLES

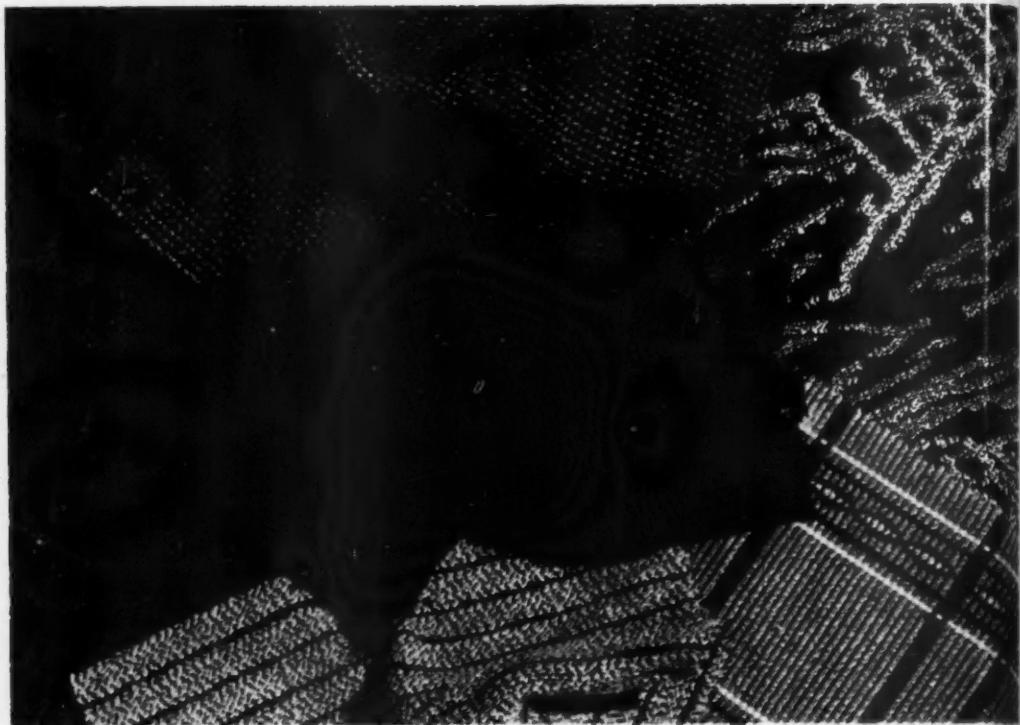
Most firms design and make handles specially for their cases. These illustrations show three recent designs which make use of both new and traditional approaches.

19 A plastics handle filled with air under pressure. DESIGNER J. A. Hanauer. MAKER W. Wood & Son Ltd.

20 The leather handle of a suitcase in coach hide. MAKER S. E. Norris & Co Ltd.

21 A metal handle covered with a PVC coated fabric and cushioned with foam rubber. MAKER Antler Ltd.

All retail prices quoted are approximate and include purchase tax where applicable.



Rich choice at the right price

WYNDHAM GOODDEN

THE DESIGN CENTRE has been open a year, and it begins to be possible to see some of its work in mild perspective. One of the difficulties early foreseen by the CoID was that of showing textiles. To be of any value, either to manufacturer or buyer, lengths rather than cuttings must be shown; and these, to have their proper effect, take up a lot of room. It is already obvious that the Centre could, with advantage, be two or three times the size it is: and that the Government, any government, will be short-sighted indeed not to do everything in its power to expand and underline this wonderful shop-window - especially if a common European market is to be a challenge rather than a bogey, to be accepted, and indeed welcomed, rather than side-stepped.

Furnishing textiles are, of course, continuously shown as upholstery of the various chairs and sofas exhibited for their own sakes, and a certain number of rugs and carpets are on the floors: in addition to these, groups of textiles or single lengths are scattered, perhaps one should say woven, throughout the Centre's standing exhibition as a whole. It is a step in the right direction, therefore, to see the Council beginning to use a single area exclusively for the products of one

firm. This area consists of the wall flanking the staircase leading from the ground floor, and it has already contained displays of Gayonne's, Prospect's, Heal's and Lister's newest ranges; to be followed, by the time this article appears, by Cavendish Textiles. The ranges shown, of course, are selected by the same machinery which controls selection of all goods shown in The Design Centre, and not by the manufacturers themselves so that it is a tribute to any firm exhibited in this way, in that it is proof of a sufficiently high standard of output to be capable of showing as a range.

The Prospect Manufacturing Co Ltd is aiming at a quite unusual production and design coverage with its range of 'Spectrum' weaves: and the display at The Design Centre showed what a remarkable achievement this is. It is impossible to miss the guiding hand, an eye, of that textile genius, John Murray, who joined the board of directors after having done very much the same sort of thing for David Whitehead in the field of furnishing prints.

The Prospect Manufacturing Co is one of the largest Jacquard weaving plants in the world but until it was taken over by the Noble family in 1955, and until the acquisition of Dr Murray, its output was undistin-

guished Mancunian and its policy traditional (in that tradition filters down, getting ever thinner as it falls) and unimaginative. The new board set about giving its company a shot in the arm - or rather a solid diet of injections; setting up pilot plants and hand loom sections, re-organising studios, hiring new designers, raising the standards everywhere of exactness in dyeing and quality control. The results were, and are, spectacular; and the firm is now able to deliver direct to retailers in immediate quantities any of some 20 woven patterns of quite unusual distinction, in a wide range of colourways. Furthermore, although nearly 100 per cent cotton, these are not expensive. Apart from the interest and marked contemporary handling of the woven patterns themselves, they are all notable for the sureness

and pitch of colour. The range has basically been built on an excellent septet of orange, red, pale blue, grey, spring green, coffee and a clear, sharp yellow - with black and white: olive, rose, khaki, dark green and grey-blue are added to the subtler mixtures. The handle and surface are pleasantly crisp: the feel of them being evident to the eye alone.

As one would expect with an effort of this magnitude, and with a firm which realises that people buy things that are meant to be smart and pretty primarily because they are smart and pretty, with a firm in other words that puts design not only first but in a controlling position on all fronts - promotion, letterheads, showrooms, etc, all carry the same distinguished style. Where every prospect pleases

The 'Spectrum' range of woven furnishing fabrics as shown recently hanging above the staircase in The Design Centre. For the qualities of colour and Jaquard patterning displayed these fabrics,

at retail prices ranging from 13s 11d to £1 17s per yard, are relatively inexpensive. They are the work of the design studio at the Prospect Manufacturing Co Ltd.



The standpoint of perfection

By aiming at perfection a pruner has been designed that opens the way for major improvements in subsequent models at lower prices

JOHN E. BLAKE

THE HIGH COST of good design has often brought angry criticism from those who might otherwise have developed a more sympathetic appreciation of what the industrial designer of today is trying to do. The theory that a manufactured article of good design should be no more expensive than a similar one of poor design has been put forward at one time or another by most people who are interested in promoting the increased production of well designed goods. This theory, however, often ignores a number of pertinent facts which it is important to understand.

Some pioneering firms are small and have limited production facilities; market reactions may be too uncertain to justify extensive tooling; the design may depend on materials or finishes of unusually high quality; new features may be incorporated that add to the product's usefulness - and so on. The 'Knifecut Pruner' by Wilkinson Sword Ltd illustrates one way in which the cost of a product can be justified not only by its own fine quality but also, and perhaps more important, by the basic discoveries in design which are allowing considerable improvements to be made in subsequent, cheaper models.

Consultant for new designs

Several years ago Wilkinson Sword developed a design policy perhaps unique among manufacturers of hand and garden tools. The firm appointed a design consultant, Hulme Chadwick, himself an experienced gardener, to co-operate in the design of individual garden tools, to carry out a programme of design for packaging and display material and to assist on long term product planning. The first results of this policy were seen in the new 'Sword' shears and the Swoe (already reviewed in DESIGN for May 1954 and May 1955); the 'Knifecut Pruner' is the latest and in many ways the most interesting in the range.

Considerable work has been carried out by some firms on the development of efficient cutting actions in pruners, and a number of excellent examples are available. Little attention, however, has been paid to

1		4	
2		5	
3	6	7	8

1 The earlier pocket pruner in which the blade shapes have certain similarities to those developed for the 'Knifecut Pruner' (4 and 5).

2 The first of many development prototypes for the 'Knifecut Pruner' before the final version was settled.

3 The components of the 'Knifecut Pruner' can be seen in this exploded view. Grey painted cast magnesium alloy is used for the handles and rust proof 'sword' steel for the blades. The thumb lock is a simple ratchet mechanism.

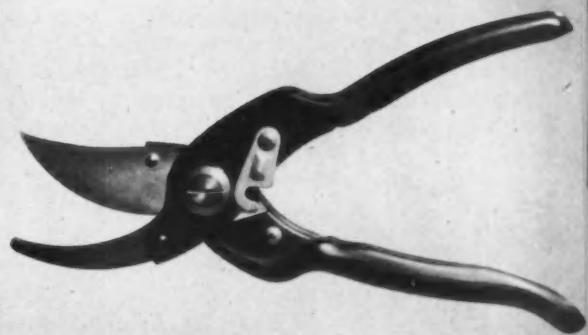
4 and 5 The new pruner is shown here, same size, open and closed. The pivot is a floating joint similar to the one used for the earlier shears. The second joint acts as a stabilising guide for the heel of the female blade, preventing twisting. Note how the rivet heads have been placed to line up with each other and with the thumb lock, and how the points of the blades meet exactly when closed. Price is £2 10s.

6 The reverse side of the blades. A milled recess on the female blade was designed to allow the escape of sap.

7 The comfort of the handles is greatly superior to other pruners and this illustration shows how the handle fits the shape of the hand.

8 The 'Sword', a new cheaper pruner uses handles of similar shape but in pressed steel, and a simpler version of the thumb lock. The blades remain much the same as in the 'Knifecut Pruner'. Price £1 10s.





**The standpoint
of perfection**

the comfort of the user. The faults are well known to gardeners – fingers are often pinched; when open the handles are sometimes too widely splayed to allow a firm grip; the handles are mostly at such an angle that the hand slides towards the pivot with subsequent loss of purchase; pivots in some varieties work loose allowing the blades to twist and tear the stems of plants; clips which hold the handles together are difficult to operate. Perhaps some manufacturers have considered that these failings are unimportant compared with the desire to mass produce a tool at a competitive cost – that the hand can be more easily adapted to the tool than the tool to the hand.

Wilkinson Sword's approach to design was diametrically opposed to this. The intention was to design a pruner to ideal requirements – a pruner that could be used for long periods without fatigue, that would work efficiently and maintain its efficiency for many years. An effective sliding action, causing the male cutting edge to be drawn in a slicing motion across the female blade, had already been used for earlier pruners. A development of this action to allow the cutting of thicker stems was the starting point for the new design. A wide blade opening had to be reconciled with a handle that would be narrower when open than most

other models. The pivot had to be designed to prevent any tendency for the blades to twist and the pivot itself had to be secure. A simple-to-operate locking device was needed and handles were required that would allow the hand to maintain a firm hold in comfort.

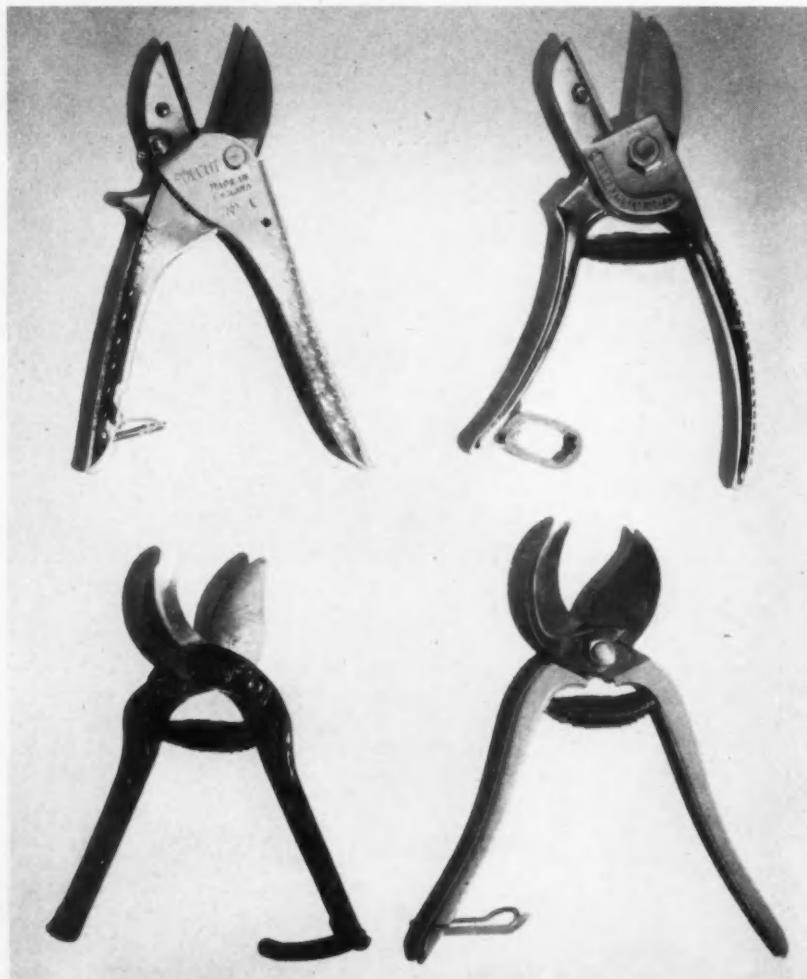
Development work proceeded over a period of three years during which time more than a dozen prototypes were made. These were tried out by experts and their comments and criticisms contributed to the fund of information that determined the form of the final design. Much work went into the shaping of the handles. Early versions were modelled in plasticine and later many dozens were made in wood until a satisfactory shape was achieved.

Visual expression of quality

Careful attention was also paid to appearance, for the clue to the tool's mechanical quality will be derived from its initial visual impact on the purchaser. The warm grey spray painted handles suggest a softness in the hand which points up the contrast with the cold efficiency of the rust resisting 'sword' steel of the blades. When closed the points of the two blades meet exactly neither overlapping nor falling apart – it is not essential for efficiency, but it says in visual terms "this is a precision tool". The exact location of rivet heads has been considered in relation to each other, to the thumb lock and to the pivot. All these are small details that seem not to matter in a utilitarian tool for the garden, but together they add up in a way which makes superiority obvious.

The 'Knifecut Pruner' set out to be an ideal pruner and it has come near to achieving this objective, though its failure to meet the needs of the left handed user cannot be ignored. At 50s it represents value for money, but the cost is still high compared with other pruners. By aiming for perfection, however, important advances have been made and a mass of valuable information has been collected. This information is now being applied to other models at more competitive prices. The most costly refinements can be pared away, cheaper production methods can be employed, so that many of the best features of the 'Knifecut' will soon be available in the 'Sword' at 30s (see page 35) and the 'Sabre' at 17s 6d (not shown here). The approach commend itself to other industries.

These four examples represent the average price level of other pruners available on the market against which the 'Knifecut Pruner' will have to compete. Top left, one of the best known of pruners, this example has an excellent cutting action in which the blade is pulled backwards and down on to a flat brass block. A simple and effective clip is available on a chromium-finished model selling at £1 2s. MAKER Rolcut Ltd, 14s. Top right, a new model employing a similar cutting action though more attention has been given to comfort in the hand, and the leather strap is easier to use than the metal ones shown here. MAKER Brades Nash Tyzack Ltd, 15s 9d. Below left, an early Wilkinson Sword design using traditional parrot beak blades which give less clean cut and have a tendency to twist, 20s. Below right, a similar model which gives comparable results, but here the spread of the handles when open is wide causing the hand to slip upwards. MAKER Wilkinson & Cuthbert Ltd, 8s 6d. In these last designs there is a tendency for the palm of the hand to be pinched in the exposed springs. The prices quoted are retail.



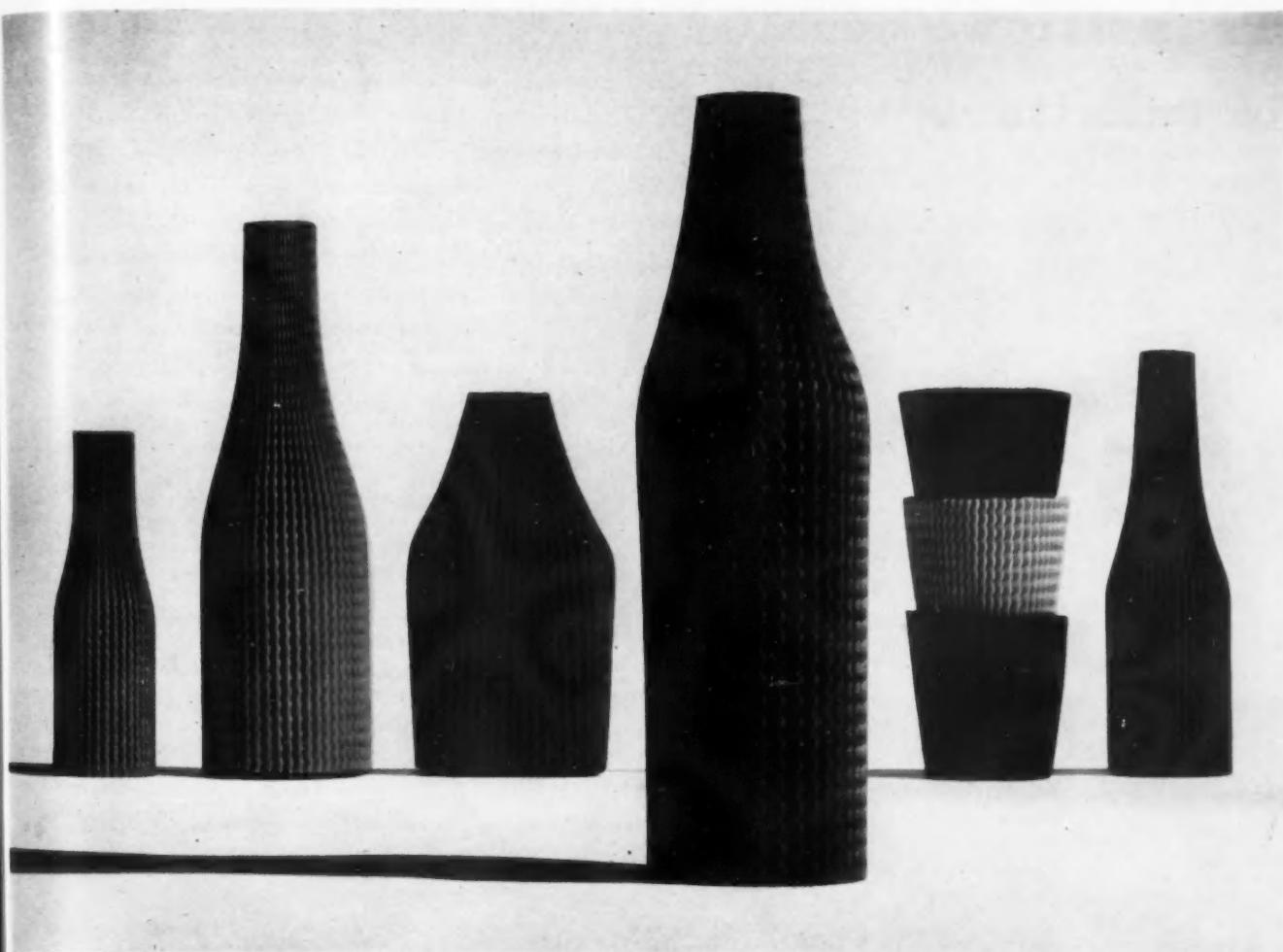
prevent
the pivot
locking
and that
hold in

l of three
prototypes
and their
fund of
final de-
handles
and later
tisfactory

re, for the
e derived
aser. The
a softness
h the cold
el of the
ades met
— it is not
rms "the
rivet heads
her, to the
small detail
ool for the
way which

deal pruner
ive, though
anded user
for money,
er pruners
nt advances
rmation ha
ing applied
. The more
cheaper pro
many of the
available in
the 'Sabre' a
comments

level of other
the 'Knifex'
the best known
ction in which
at brass block
mum-finish
Top right
though
and the leather
early Wilkins
which give
Below right
here the spr
and to slip
In these the
the hand m
are retail.



Protective textures



MOST METHODS of protective packaging used today considerably increase the volume of the object protected; they are seldom aesthetically interesting and usually involve considerable additional labour. 'Carbion', a new protective packaging produced by Spicers Ltd, may meet the demand for a more flexible form of protection; it has a resistance to crushing not unlike foam rubber, and the corrugations give stretch and elasticity as well as an attractive texture.

'Carbion' was conceived by an Italian engineer and perfected by another, Dr Pietro Molla, who supervises each installation of the intricate machine which produces the material from paper. Spicers Ltd houses the Italian machinery in a 23,000 sq ft factory at Loughton in Essex, where 'Carbion' is being made in two forms,

flexible and rigid. The latter is not elasticised and is intended for decorative packing, or interleaving flat or shallow objects such as ceramic plates. In its flexible form, illustrated above, it is shown made up into sleeves which take the shape of the object it is to protect; its elasticity keeping it in position. A range of colours is available.

The great strength of 'Carbion' comes from the horizontal and vertical corrugations which give a zig-zag pattern, and the flat paper is increased in structural strength in ratio to its contraction. The harder the base material, the higher the impact resistance to knocks and abrasions. It is usually made of straw paper but a wide variety of base materials can be used, such as viscose film, cellular wadding, or coated paper. P.H.

Transition in furniture

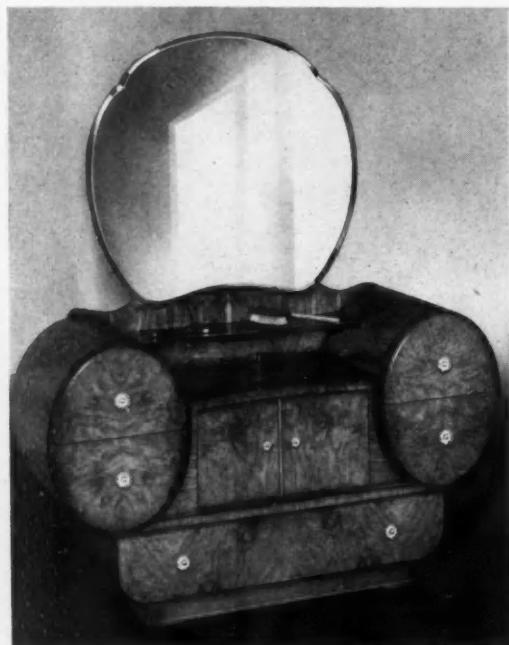
BERNARD Mc GEOGHEGAN

THE 'FURNITURE EXHIBITION' this year revealed a dramatic leap along the road which the furniture industry has been following, albeit slowly, for several years. In 1953 it was possible to count the stands displaying well designed modern furniture on the fingers of one hand. This year it was the bulbous, treacle covered creations that were rare and had to be hunted, to quote our earlier report, "as funny relics". The lessons learned as a result of the utility scheme were soon forgotten when the scheme was modified in 1948 and the majority of firms in the industry reverted to the popular styles of 1939. Now the underlying significance of those early utility designs is being appreciated by public and manufacturer alike, and new refinements have evolved from foundations of functional simplicity. The effect on individual firms has been profound, involving major changes of policy. The author has chosen to discuss three firms which have recently made great improvements in the design of their products with significant commercial results.

It is difficult to believe that these two pieces were produced by the same firm. BELOW the flamboyant design of this model, produced in 1952, is wasteful of space and material. The recent 'Uniflex' model, right, shows a great improvement giving better storage

space without appearing ponderous. The shape of the mirror, however, is unrelated to the rest of the design, and the herringbone inlay in the centre drawer seems an unnecessary enrichment.

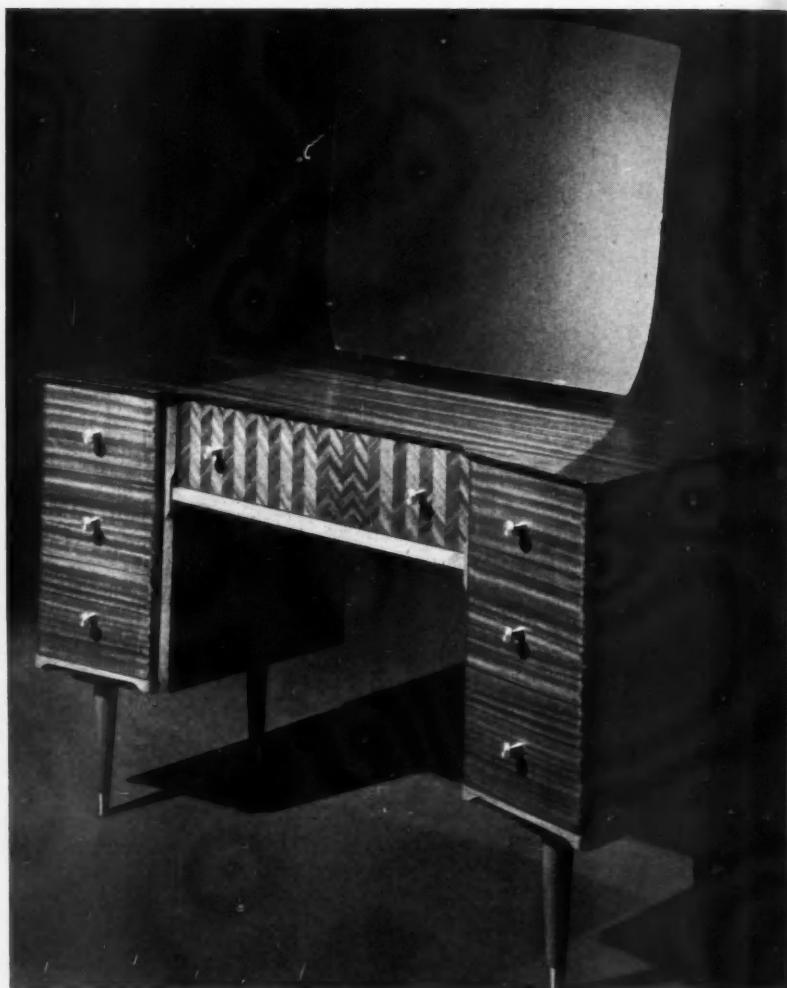
MAKER Lazarus Ltd. £28.



L. Lazarus & Sons Ltd

L. Lazarus began making furniture 50 years ago and from a very modest beginning now claims to be the sixth largest manufacturer of bedroom suites in the country. The firm did not produce furniture of modern design, however, until 1954. The new range in that year had every appearance of being a success, judging from the sales which totalled 25 per cent of the company's turnover.

The following year the range was submitted for consideration by the CoID's 'Design Review' committee and following some changes in design most of the units were accepted for inclusion in 'Design Review'.

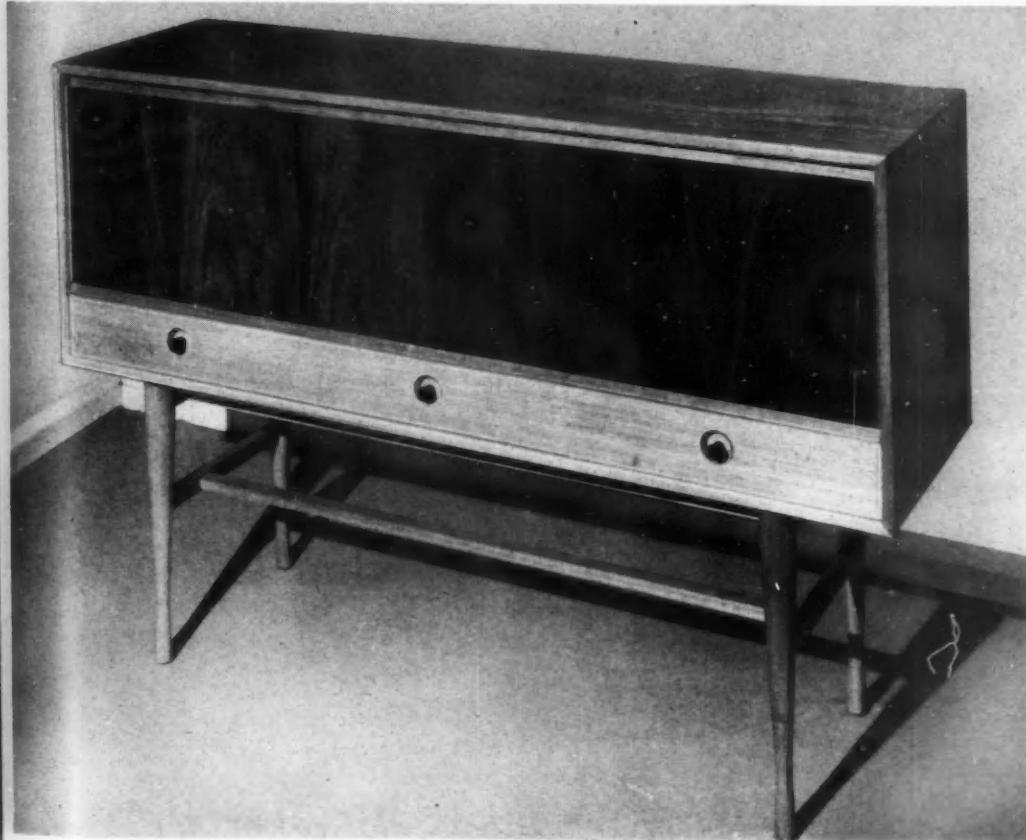
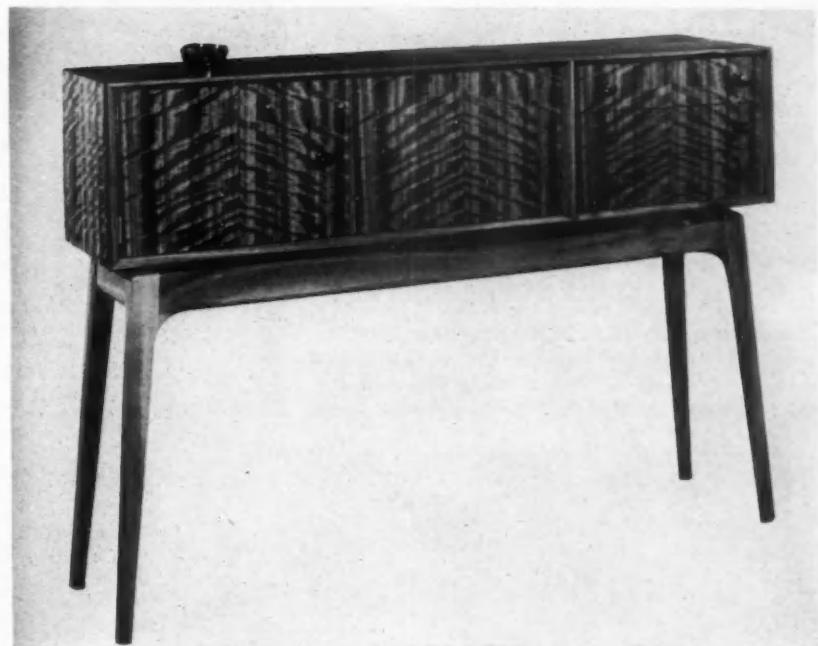


The most important development in 1956 was the appointment of Jerome Spring, a young staff designer, to develop a new range of furniture to be launched in 1957. The sales of modern furniture in this year had risen to 80 per cent of total turnover. The range now being developed

should be available this month. It shows some rationalisation of production in which a number of component parts can be assembled in different ways to give a variety of pieces. While this aspect of production is not of direct interest to the purchaser it can help to reduce retail prices.

Archie Shine Ltd

It can be said that small companies are often uneconomic and live too near the bone to develop freely. Alternatively, they can be sufficiently flexible to change their policy more readily and to experiment and create new ideas in design. The small firm of Archie Shine Ltd falls into the latter classification. Mr Shine began to produce furniture as a company five years ago. His demands of furniture are "that it should be well made, beautiful and profitable". Not being a designer but a craftsman he naturally looked for his ideas to the 'Cabinet Makers' Guide' and similar publications of the eighteenth century and produced his pieces accordingly. His son, also a director of the firm, had been reading twentieth century publications and it was decided to produce a twentieth century suite. The result, however, showed a lack of understanding of the problems involved and was a mixture of clichés. They realised the shortcomings of this design and approached the COLD's Record of Designers for advice. Subsequently Robert Heritage, who has now become consultant designer to the firm, designed two suites which went into production. And to quote Mr Shine: "I am now making furniture that is pleasing to my son, myself, my reps and my pocket".



ABOVE Valuable storage space has been wasted in this design, and the bold figuring of the veneer is inappropriate when used in such a small area. The storage accommodation in the later model, LEFT, designed by Robert Heritage is approximately twice that of the original sideboard; the contrast between the mahogany and the richly grained rosewood of the front panels gives texture and depth to a design that is basically simple.
MAKER Archie Shine Ltd. £60.

Transition in furniture

Hygena Cabinets (Liverpool) Ltd

The firm of Hygena was well known in pre-war years for its moderately priced and well finished kitchen cabinets. During the war years production ceased and the forced break with the industry provided an opportunity to re-assess the direction of post-war development. For some years the directors of this company had been broadening the range of their products to include kitchen units that could be built up together to form a fully equipped kitchen, and during 1953 they approached the CoID for advice on the choice of a designer. From the list of names suggested by the Council's Record of Designers George Fejér was finally appointed as consultant. The outcome of this co-operation between designer and manufacturer has led to the production of a growing range of kitchen units, flexible enough to meet the demands of individual requirements but standardised at the point of production. The manufacture of individual kitchen cabinets still continues in full production as these remain the best way of coping with storage where floor space is too re-

stricted for units. During the past three years Hygena has produced a number of designs of this type that have gradually established a new high standard in what had previously been regarded as a conventional market.



ABOVE 'Fitness for purpose' characterises this kitchen storage equipment produced about 1950, but how impersonal it seems in comparison with the firm's latest range, LEFT, designed by George Fejér. Here the various units in the range are more subtly integrated, and the use of colour gives warmth and feeling. The carcase and the drawer fronts are in natural beech and plastics have been used for the working area and the air vents above the painted cupboard doors.

MAKER Hygena Cabinets Ltd. Sink unit (enamel) £19, base unit £8 15s, open end unit £11 17s 6d, dresser £14 4s, wall unit £8 6s.

Prices are approximate and include purchase tax where applicable.



Flats at the Parkleys Estate, Ham Common. Architect: Eric Lyons

CONSUMER NEEDS 4

Some of the problems which families had encountered in furnishing their New Town houses were discussed by the author in DESIGN for February. Recently she has been talking to housewives at the Parkleys Estate, Ham Common, to find out how far their needs in furnishing these modern flats have been met by products which are available in the shops. "What products have you regretted buying?" "Do you feel that functional improvements could be made in the equipment you have bought?" "Have you been unable to find products that you really require in the home?" These are some of the questions she asked. The following report and the photographs taken inside people's homes show that many improvements can be made in the design of domestic furnishings and equipment. Dissatisfaction with certain products confirms the need for an independent organisation to protect consumer interests. Such organisations exist in America and Sweden and were described by Rosetta Desbrow in DESIGN for March.

Home equipment on trial

DOROTHY MEADE

PRIMITIVE TRIBES do not need to be taught that the things they make must do their job properly; no CoID is necessary to advise on the construction of an igloo or to appoint a designer of poisonous darts to the Motilon Indians. That such slogans as 'fitness for purpose' and 'good design good business' are necessary today shows how difficult it has become to see the wood for the trees. So wide is the choice of goods on the market, and so many the secondary factors to guide the shopper, that it is easy to become confused and lose sight of real needs in the choice of the simplest household object.

"It was the cheapest they had" . . . "Mrs Jones has one" . . . "The red handle goes with my curtains" . . .

"No kitchen" (says the advertisement) "is complete without one" etc, etc. Whether it is really fit for its job and the best of its kind, and whether it is needed at all, is not always considered by purchasers. Hundreds of different kitchen gadgets are sold to do jobs which one sharp knife would do just as well, saving space and washing up. And as household work becomes increasingly

mechanised the problem of selecting powered appliances grows greater. With a choice of, say, 10 washing machines or electric mixers, how can one possibly know which to buy, unless some unbiased body can test and report which is the best for one's purpose?

Manufacturers are always ready to advise, but they naturally recommend their own products. An increasing amount of consumer research is being carried out by manufacturers, but since their main object is to increase sales, it is just as likely to result in a new up-to-the-minute package, or a give-away baking tin with the cake mix, as in a real improvement in the quality and design of the product itself.

Hit or miss buying

The traffic of ideas is one way. "This is what we make - here's why you need it". The logical train of thought for the shopper should be - "What do I need and want in my house?" "Where can I get the best and most suitable for me?" "If it isn't available, who will make

Photographs on pages 42, 43 and 44 are by Sam Lambert

Home equipment on trial

it?" But there is no method of comparing all the aspects of one product with another. It is a question of hit or miss, for there is no organisation in this country, as there is in Sweden and the United States, which has only the consumers' interests at heart, and will give an unbiased opinion on every aspect of the products tested.

Do consumers feel the need of further guidance? Do they feel that their present day needs in the home are not being filled? Would manufacturers gain by a closer link with them? To try to find this out I visited a number of flats on a new estate at Ham Common, and spoke to families who have recently set up home. All had furnished the same type of modern flat - with tiny halls, small but well equipped kitchens, low ceilings throughout, with one large living area, big windows - compact, easily run homes on a small scale. Their furnishing problems were common to most young couples setting up home for the first time in recently built houses and flats.

Most of the families had looked carefully round local and London shops, compared common problems with friends and studied furnishing magazines before buying. They had bought carefully and tried to get good

value for money, and nearly all had agreed that the furnishings of modern design fitted best in their modern flats. But however carefully selection had been made there were things which they regretted buying, and others which they were not able to find of a suitable standard and design for their needs.

A polythene dustpan, for instance, 1, bowed in the middle when the least pressure was exerted, so that the dust slipped underneath again. A kitchen storage jar, 2, though gay and pretty in the kitchen, had a loosely fitting lid and a rim to the jar which collected dust. (The manufacturer told me he had not heard this criticism before, and did not feel it necessary for storage jars to be airtight.) The hot plate of a new gas stove, 3, was too widely spaced for a small saucepan to balance upright on it.

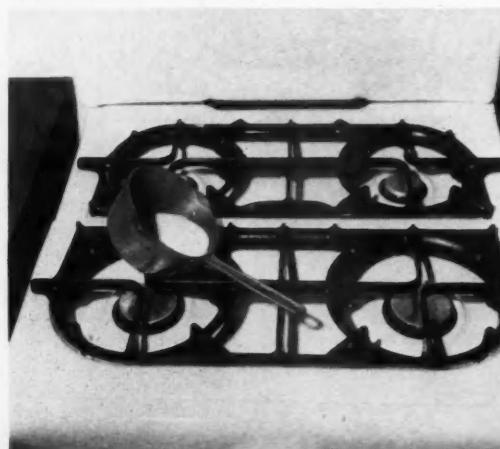
Maintenance and cleaning problems

Difficulty of cleaning was criticised in many cases. Could there be better access to gas ovens, or could they dismantle somehow? The ceiling light fitting, 4, though satisfactory in other ways, does not unscrew for cleaning and collects a lot of grease and dust. Venetian blinds, particularly when used in the kitchen when

1 Polythene dustpan bowed in the middle



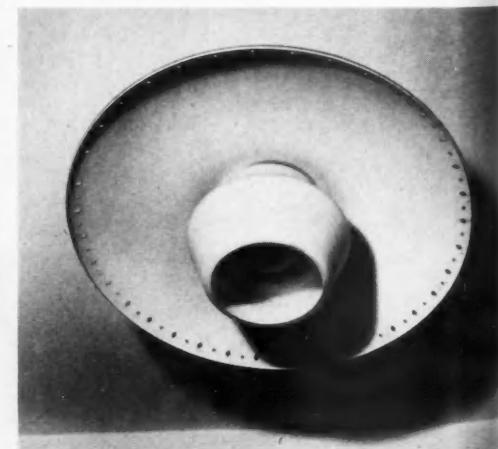
3 Gas hot plate was too widely spaced



2 Storage jar had loosely fitting lid



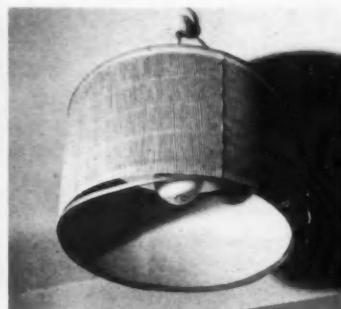
4 Light fitting was difficult to clean



eed that
in their
had been
buying,
of a suit-

ed in the
so that the
age jar, 2,
a loosely
ated dust
eard this
ssary for
a new ga
ucepan to

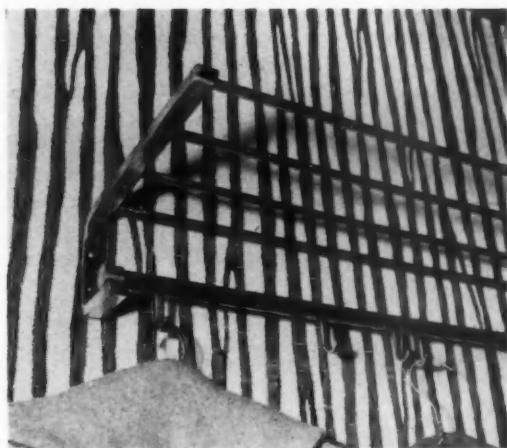
ny cases
or could
fitting, 4
screw for
Venetian
en when



5 Three lamp shades had started to disintegrate after a few months



6 Paint on handles peeled after two months



7 Only this Swedish coat rack was said to be suitable

grease accumulates on the slats, are difficult to clean, and in one example with red tapes the colour ran when washed. (I checked with the manufacturer. If blinds become dirty, the firm has a laundering service. It agreed that red and mulberry tapes are inclined to run, but the few complaints did not warrant any sort of labelling to this effect. The firm is at present researching on plastic tapes which are fast.) The problem of rubbish disposal was frequently brought up - kitchen rubbish bins tend to rust, particularly the handles, and there was a suggestion that bins might have disposable linings, possibly of polythene, for cleanliness.

There were criticisms of poor finish, notably in lampshades. The three illustrated, 5, had started to disintegrate after a few months of use. (I checked with a leading manufacturer and retailer of this kind of shade. The manufacturer told me that he thinks the cause of the trouble is that bulbs of too high a power are used. Asked if he specified the appropriate bulbs to be used:

- "Yes, on price lists to buyers they are always quoted."
- "Are the individual shades marked, to ensure that this information reaches the customer?"
- "No. I think it would be wise for us to do so, for our own protection."

The retailer I spoke to agreed on the cause of the trouble, and said that though he makes a point of passing on to the customer any information about

power of bulbs to be used, he thinks this is very often not done by other retailers.)

One housewife felt that in spite of the excellent finish on most parts of modern stoves the metal plate racks were poorly finished. Better rustproofing of metal parts was asked for by several, for example on bathroom cupboards, window fixings and kitchen handles. Three housewives complained of the handles of a range of kitchen utensils and the illustration, 6, shows one new spoon, together with a palette knife and masher after two months' use, with paint peeling off. (I spoke to the manufacturer. He is aware of this difficulty. Under kitchen conditions the wood expands and contracts and the enamel tends to split. He is trying to find a solution to the problem. I suggested he should leave the handles plain wood, but he said the gay colour was a good sales point.)

Products wanted for real needs

Asked whether there were any things they needed for the home and were not able to find, several housewives had found gaps which they were not able to fill suitably. No-one had found a well designed modern coal scuttle. There was a scarcity of good fire-irons, umbrella stands, linen baskets, coat racks. The coat rack, 7, is Swedish and was bought when no British made rack of the same standard could be found. The Dutch bed base, 8, was specially imported because it was said

**Home equipment
on trial**

to be cheaper and better constructed than anything to be found in this country. There was a plea for better fireguards (the traditional type, 9, was the best that could be found) and for a man's compactum for suits and clothes not so tall that it swamped a room with a low ceiling. Was there a left-handed iron? Light fittings were agreed to be relatively expensive, and many families had made their own as they could not afford the kind they wanted. 10 and 11 are two examples of successful home made shades.

Closer links with manufacturer and public

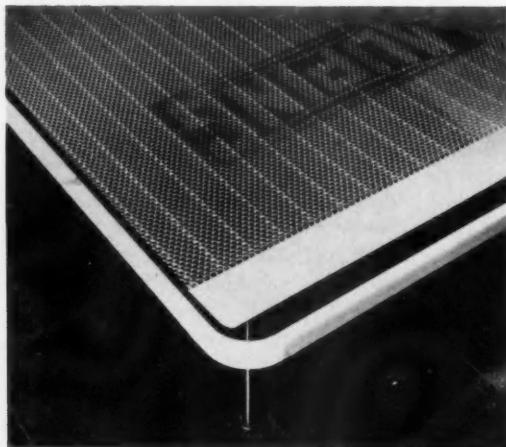
The plea for better labelling and instructions for use was repeatedly put forward — materials guaranteed shrink and fade proof, instructions for cleaning rugs and carpeting — were a few which were mentioned. Also it was felt that branded goods were a pointer to value for money; unnamed goods being more of a gamble than a name which one knew to be reliable. (But the fight for precedence in the kitchen, with 'Coldrator', 'Kelvinator', 'Frigidaire', 'Electrolux', and so on vying for flamboyance in autographing their own

wares is going too far the other way.)

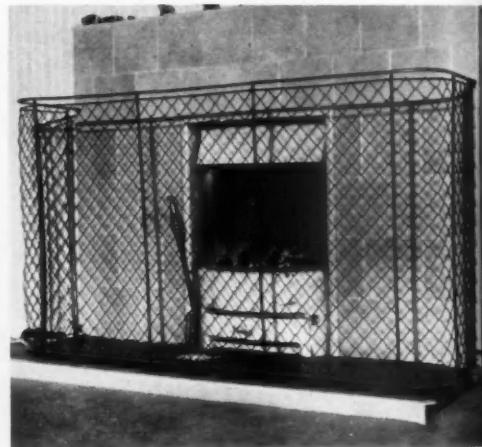
When complaints were made about unsatisfactory purchases, usually manufacturers were anxious to replace any faulty goods, though there was often a long delay. (A sewing machine table which warped remained with the maker for a year.) But I found a reluctance to complain. I am sure that consumers do not complain nearly enough, and manufacturers to whom prestige matters welcome any valid criticism. Usually, they are only too ready to try to remedy the fault.

Although the few families I visited were by no means a representative cross-section of consumers, I am convinced that the number of criticisms and suggestions which they put forward shows that manufacturers have a lot to learn from a closer link with the public for whom they make, and that the public would welcome and greatly benefit from it. Furthermore, there is clearly a great need for some sort of consumers' organisation, whether privately or publicly financed, on the lines of the American Consumers' Research Inc on Consumers Union of US Inc, to safeguard and assist the shopper in this country.

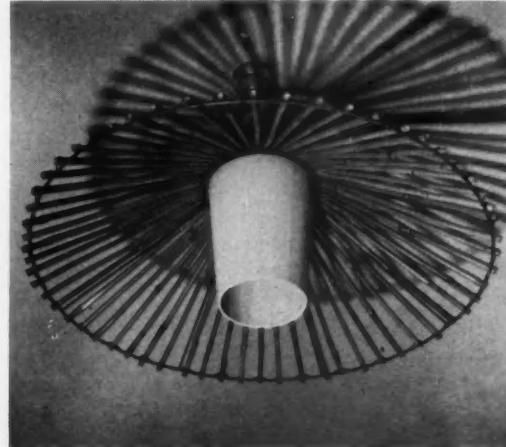
8 Dutch bed was said to be cheaper and better made than British



9 Traditional fireguard was best that could be found



10 and 11 High cost of light fittings gave rise to these successful home made examples. Design on right is patented



Graphics in context

GRAPHIS ANNUAL 1956/57, edited by Walter Herdeg and Charles Rosner, Sylvan Press Ltd, £3 15s

THIS ANNUAL on international advertising art, the fifth in the series, is printed, produced and designed in the exemplary way we have come to expect from any Graphis publication. Walter Herdeg and Charles Rosner had made a very thorough collection of advertising art across the world. From that they proceeded to a selection for publication. It is the right and perhaps the duty of editors to base their choice on a bias, and theirs I suppose is what they consider to be the best of contemporary design in posters, advertisements, booklets and magazine covers, gramophone record covers, house organs and book jackets.

The selection seems representative of most of the work done internationally in graphic design, although I am surprised both at some omissions and inclusions. That, however, is inevitable in connection with any venture of this size; it is only right that it should to

some extent reflect both the editors' loves and taboos. Yet I cannot help some reflections, no more directed against the 'Graphis Annual' than any other similar year book.

To some readers 50 or 100 years hence, this book would not indicate what advertising on poster hoardings and in newspapers looked like in the mid-century. I am naturally not suggesting that the all too familiar vulgarities in advertising should be reproduced on the excellent and expensive Swiss artpaper. But, all advertising – as somebody once said – is the art of interruption, and therefore every design can only be seen and judged first within its context – townscape for the poster, newsprint for the press advertisement – and second, against its competitors. To assess the Container Corporation advertisements Mr Rosner says that they have to be seen in 'Fortune' where they appeared. The value of the Olivetti advertisements in Britain is that there is nothing like them in the British Press, and therefore they stand out and are unique. To take examples out of their context means to deprive them partly of their life and their *raison d'être*.

It is even more disturbing to find all the examples in the book not merely deprived of their original contexts, but brought into new contexts. Similar items are shown together, and whereas a Savignac poster sings out on a wall against the drab and dreary efforts of others, it here finds itself neutralised by similar posters from other countries, trying to emulate the originator.

Posters, if they are good, are designed for their particular size, and when reduced in a book to the size of a Press advertisement or large postage stamp printed in monochrome and seen side by side with other posters, they lose more than many readers could imagine.

As I have said, this is no particular criticism of the 'Graphis Annual'; it applies to all annuals and also – to a lesser degree – to magazines of this kind. I know, however, that my feelings and reactions are shared in the design profession. If they are justified, it may be that changes in format and design might go a long way to overcome them.

F. H. K. HENRION

LEFT The posters for 'The Financial Times' by Abram Games, and London Transport by A. Rossiter, were included in 'Graphis Annual 1956/57.' DESIGN photographed the posters on typical London sites to show how they would appear in their natural context – a point discussed above by Mr Henrion.



STAMPS

*British printer uses
consultant designer*



2



3



4



5



6



New Zealand To mark the seventy-fifth anniversary of the first shipment of frozen meat to Britain this year, the New Zealand Post Office in Wellington asked the New Zealand Meat Producers' Board to obtain draft designs for two postage stamps. The board furnished two rough sketches, one showing a fat lamb on a map of New Zealand, the other illustrating the methods of transport and the anniversary inscription; in the final version a lamb was also added to this design.

Harrison & Sons Ltd, which printed the issue, asked Michael Goaman to re-draw the local designs. The final versions of both stamps are reproduced left, 1 and 2. These are the first truly modern postage stamps printed for New Zealand, and the clear arrangement of the material with display lettering derived from Monotype Albertus Bold, speaks highly for Mr Goaman's successful interpretation of the brief.

This series will be followed by three commemorative stamps designed by Mr Goaman for the fifteenth anniversary of the award of the George Cross to Malta, where sketches produced by local artists have been redrafted into a series of integrated designs.

The most hopeful aspect of this continuing series of commissions lies in the realisation on the part of one of the four stamp printing contractors in Britain that Colonial and Dominion postage stamps can be immensely improved if a designer is consulted. It proves moreover that non-British postal administrations are as ready to accept competent revisions from British printers, as they have previously been content to make do with slight adaptations to their own designs.

Ghana Even new countries adhere to old traditions as the Ghana stamp issue, 3, (the first original design for that state) proves. Dr Kwame Nkrumah's portrait replaces that of the Queen, showing that the traditional 'royal portrait' must be replaced by a local equivalent to gain acceptance; the map and fish eagle (representing Ghana geographically and heraldically) are disjointed elements springing from local demands. In choosing photogravure reproduction – possibly for reasons of production speed – Ghana has at least avoided the security engravers' ornamentation, and laid a basis of designs capable of future improvement.

Postage due stamps for Gibraltar and Basutoland, 4 and 5, were printed in London; both were issued for the first time last December. In the Gibraltar issue, with its distorted figures of value, the printer was instructed to follow the postage due issues for another colony, merely altering the name. The Basutoland design is entirely new, representing the coat of arms of the Protectorate, which can never have been displayed in a less worthy setting. Once more, an unfortunate demonstration of the lack of thought behind some stamp design commissions.

Poster-stamp The poster for the 'Graphic 57' exhibition in Lausanne, illustrated in a recent issue (DESIGN March page 55) has been skilfully adapted for the five centimes Swiss publicity stamp, 6. Ernst Witzig was responsible for the translation of his poster design to miniature format.

EDGAR LEWY

Overseas Review

USA



The prototype Boeing '707' - the first transatlantic jet airliner due to enter service with BOAC in 1959. The interiors shown here will be modified to meet BOAC's specifications.

This close up shows the positioning of the passenger control units which allow higher than normal head room below the hat rack. Hard plastic panels for walls and ceiling have been used to give a sense of permanence and structural strength that is missing when fabric linings are used. The absence of curtains dispenses of an often fussy note. Smoke tinted shades to reduce glare, as well as opaque blinds, can be drawn across the windows.



Aircraft interiors - a new approach

A completely free hand was given to the designers of the American Boeing '707' airliner interior. This enlightened approach, which resulted in the building of a realistic mock-up, has brought world wide publicity and suggests a new relationship between interior design and selling that the British aircraft industry is now beginning to appreciate.

INCREASING INTERNATIONAL COMPETITION for the sale of passenger aircraft by manufacturers to operators, and in turn, the sale of a service by operators to the public, is causing more thought to be given to aircraft interiors than has been apparent in the past. Ultimately the efforts of all those concerned in the passenger aircraft industries is directed to one goal - to the transport of *people* from one place to another.

The growth of air travel has been so great that today a flight to Paris or Rome assumes the significance of a rather expensive 'bus' journey. In other words, the passenger is less interested in the mechanical virtues of the machine than in his personal comfort and the satisfaction given by his immediate surroundings.

This change in emphasis is a significant trend which is now appreciated by most British manufacturers and operators. The manner in which they have given expression to this trend, however, has not always been as thorough or successful as it might have been: see the criticisms of British aircraft interiors in DESIGN for March 1956. The inter-city 'bus' journey concept of air travel is, of course, more highly developed in the USA where designers such as Dreyfuss, Teague, Harley Earl, and Butler have attempted to create interiors that give a confidence and relaxation associated more with the permanence and safety of a modern hotel interior than the traditional hazards of flying.

American approach

Some indication of the importance given by American manufacturers to passenger requirements at an early stage of an airplane's development, can be seen in the accompanying illustrations of the proposed interior of the Boeing '707', the first transatlantic jet airliner due to enter service with BOAC in 1959. The interiors were designed in association with Boeing's engineers by

Walter Dorwin Teague Associates and preliminary work began in 1952. The elaborate mock-up in which visitors are given a simulated flight was completed nearly a year ago and since that time has brought world-wide publicity for the '707' project.

Value of full scale model

The approach to the design of this interior is perhaps best described in the following extracts from a letter to DESIGN written by Mr Teague himself. Asked if the mock-up was primarily built as a part of the design process, or more particularly as a show piece intended as an aid to selling the aircraft, Mr Teague replied: "The mock-up performs both functions you mentioned. It gave us an opportunity to work out in complete detail the many innovations we wished to introduce in this aircraft and prove their practicability. It also demonstrated Boeing's ability to provide an interior acceptable both to the airlines from the stand-point of ease of maintenance, and to the travelling public from the stand-points of comfort, convenience and attractiveness. It has served both purposes with marked success. It has been seen by practically all the airline officials of the world, many of them repeatedly, and parties of maintenance and operating personnel have been flown in to see it, from India, Australia, Japan, etc. A hundred and thirty four of the '707' have been sold up to the present time, the price averaging about \$6,000,000 each. This makes the investment of about \$500,000 in the mock-up very much worthwhile."

Describing other aspects of the design, Mr Teague went on: "It is our conviction that product design

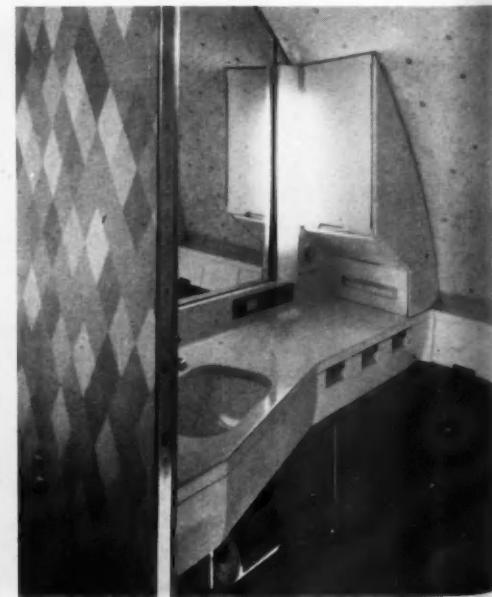


One of the lounge areas with seats covered in yellow or green hide. The free shape of the moveable partition clearly states that it is non-structural. The pattern of bottles is coloured with random areas of yellow, cerise, blue and beige on a white ground.

General view of the mock-up interior designed for the 'Boeing' 707 by Walter Dorwin Teague Associates. The moveable passenger service units containing reading lights, call buttons, etc., can be seen above the seats. A clear definition of the proportions is afforded by the use of restrained decoration together with contrasting tone and colour - dark pink ceiling, yellow hat rack, white service units, charcoal grey carpet, blue and beige or red and beige seats.



One of the four lavatories. Gay colours are used throughout but the effect of simplicity is gained by immaculate detail design of such elements as drawer fronts and handles, flush basin and counter, and careful placing of controls. Contrast of tone again points up the elegant proportions of the design. Compare with the 'Britannia' lavatory on page 50.



preliminary
in which
completed
brought

perhaps
a letter to
asked if the
the design
intended
replied:
you men-
at in com-
to intro-
ability. It
de an in-
the stand-
travelling
convenience
poses with
ally all the
repeatedly,
personnel
Australia,
'707' have
averaging
estment of
uch worth-

Mr Teague
uct designs

roughout but
etail design of
sh basin and
of tone again
Compare with

should be shown wherever possible *complete and in use*. We endeavour to accomplish this in everything we do, from a mechanical pencil to this airplane interior. After 10 years of experience with our organisation, the Boeing executives accepted this viewpoint and entrusted us with the task of developing the mock-up here, in New York. They also stipulated that no Boeing executive was to see it until it was entirely completed and we were ready to show it in our own way. Throughout the construction we had the constant and valuable help of Boeing body engineers, but these men made no report to Boeing on what we were doing. Naturally it was a nervous moment for us when the Boeing 'top brass' arrived *en masse* to see the mock-up, after we had spent half a million dollars of their money.

"Showings are always by appointment. When visitors arrive, they are received in an attractive and colourful lounge which suggests an airport waiting room, if such rooms were designed as they should be. Here any general briefing can be given. At a secret signal the flight is announced over a loud-speaker exactly as in an airport. Visitors are then conducted on board, and received by uniformed hostesses who make sure that their seat belts are fastened. Actual sounds of a take-off follow from a recording made of the take off of the Boeing '707' prototype. When the plane is in the air, the captain speaks to the passengers from the cockpit explaining the unique features of the interior. Afterwards the visitors are invited to inspect the interior in detail. Response has been universally enthusiastic, and some airlines are already planning to do over the interiors of their existing planes to obtain something like the gay, high-keyed effect we have achieved here.

Passenger service units

"Among many novel features the most radical was the introduction of the passenger service unit. It was devised for several reasons: first, so that the hat rack could be kept at an elevation which would allow outboard passengers to walk to their seats without stooping unduly; second, so that the light controls, stewardesses' call buttons, etc, would be within easy reach of inboard passengers; and third, so that the entire electrical and electronic services for each row of seats could be moved fore and aft with a minimum of time and effort.

"These passenger service units contain reading lights which are a great improvement over any now in use, passenger call buttons, seat belt and 'no smoking' signs, a loud-speaker and three oxygen masks which are automatically released if the interior is suddenly decompressed. The service units have been enthusiastically accepted by all airlines, but their form has undergone marked development in the direction of smaller bulk and lighter form since the mock-up was completed.

"This unquestionably is the first time that a complete operating mock-up of a large airplane interior has ever been built, but I am sure that it will not be the last. It enables those interested to inspect not only the visual effects, but such technical details as lighting, air con-

ditioning, air circulation, noise levels, galley operation and lavatory operation. It also enables them to test materials and easy removal of wall panels, etc, for inspection or replacement."

British opportunity

Whether or not the final result satisfies everyone's taste, this approach to aircraft interior design and the significant part which Boeing's considers the interior can play in selling the aircraft, have many lessons for the British industry. The high cost of so elaborate a mock-up probably puts such a programme out of court for individual British firms, whose resources are comparatively limited. But the announcement recently by the Ministry of Supply of a co-operative effort by seven British firms to design and produce a supersonic airliner alters the picture considerably, and provides a hitherto unequalled opportunity for Great Britain to invest in the basic research for an aircraft interior that will beat the world. For such an interior to be the success it deserves, it is essential that a competent industrial designer should be called in at an early stage, since it is only by lengthy study and careful work on models and prototypes that minor faults and irritations can be smoothed out and a high standard of design attained.

Firm's new department for interiors

Already there are signs of a new approach to the design of aircraft interiors in this country. Last year Bristol Aircraft Ltd announced the formation of an interior

This view of the 'Britannia' interior, designed to BOAC specifications before the formation of the new interior furnishing department at Bristol Aircraft Ltd, looks dull in contrast with the Boeing. Concealed fastenings for the fabric linings do much to give a clean and simple result which is emphasised by the indirect strip lighting. But the lack of any colour or tone contrast and the fussy effect of curtains (curtains need a length of several feet to hang properly) combined with the inelegant seats, contribute to the absence of style.

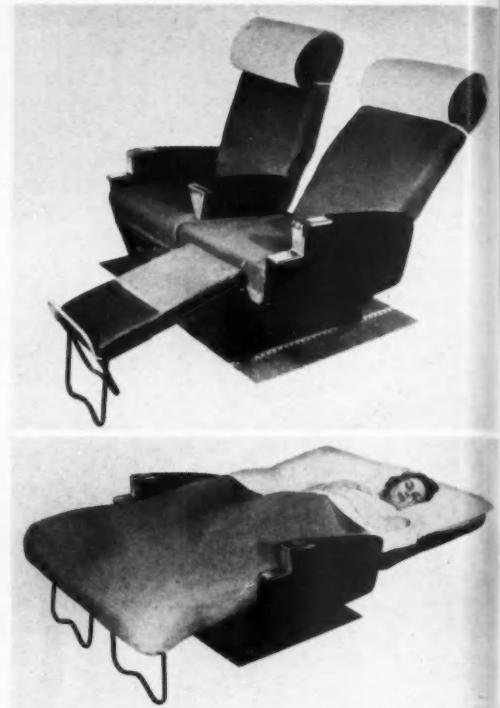


furnishing department (a slightly misleading title) to work initially on the many different lay outs for the 'Britannia' required by various operators. This new department represents, perhaps, the first attempt in this country to co-ordinate all the work which goes into an aircraft interior – from the hidden mechanics of lighting and air conditioning to the design of ash trays and the choice of fabrics for the seat covering. The team of designers and draughtsmen under Alex Langfield, the department's manager, and Donald Diamond, chief designer, promises a new lease of life for British aircraft interiors, allowing the needs of the ordinary passenger to be put forward with a voice that can be heard among the rival claims of airframe designers and electronic engineers. Such a department should be well placed to co-operate with designers appointed by individual airlines. It should be able to bring a more sympathetic understanding of the difficulties which face a designer unused to the technical requirements of the aircraft industry, but who can create a sense of

Some of the problems of creating an attractive aircraft interior may be solved when this early British seat is replaced by the new Microcell seat shown at top right.



This lavatory in the 'Britannia' shows how a lack of relationship between individual details results in an unhappy muddle. The curtains held back on the sloping wall, the awkward way in which the large mirror blends with the partition, the lazy curves of the counter and kick plates, the arbitrary relationship of the oval mirror to the triangular wall behind, the doorframe which emphasises a shape that might better be disguised, and the general lack of a tonal scheme to link the various elements together, all reveal a lack of understanding of the type of visual problem that the industrial designer is trained to solve.



This new 'Sleeperseat' by Microcell Ltd, which is to be introduced by BOAC for its 'Britannia' fleet, is an improvement on the earlier British type in comfort, versatility and appearance, though refinements in the final shape might still be made. The seat serves three basic purposes – normal seating, full reclining and sleeper berthing. The foot rest has two positions and is quickly stowed under the seat when not required.

style which may be outside the scope of the aircraft engineer. The industry is the poorer for having dismissed too quickly on technical grounds the contribution which designers, experienced in other fields, can make. Often the fault is to be found in a basic lack of sympathy at top management level and the absence of adequate facilities for interpreting the designer's ideas.

BOAC appoints consultant

It is still too soon to be able to assess the effectiveness of this new department's work. The fact, however, that it has full support from the company's directors, and that it is already working on interiors for a new jet airliner now being planned at Bristol's, augers well for the future. The interiors of the 'Britannia' for BOAC, illustrated here, were worked out long before the department was created, and although the effect is clean and unpretentious it lacks that sophisticated feeling for style which is characteristic of the Boeing interior.

The latest pointers are the formation of a committee at BOAC to plan policy on the corporation's aircraft interiors, and the engagement of Gaby Schreiber and Associates in an advisory capacity. The committee's immediate objective is to approve a new interior scheme which will probably be standardised throughout the BOAC passenger fleet. The results will be watched with interest.

USA

Industrial sweeper redesigned

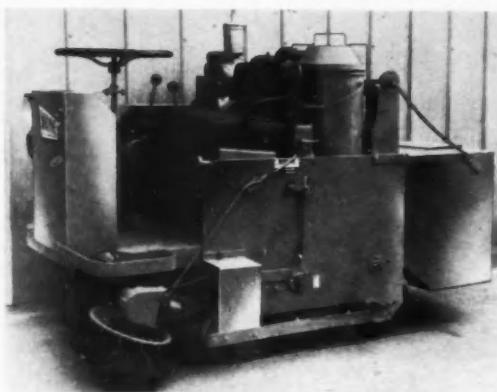
introduced
ment on the
ance, though
e seat serves
; and sleeper
ckly stowed

the aircraft
having dis-
e contribu-
fields, can
basic lack of
absence of
ner's ideas.

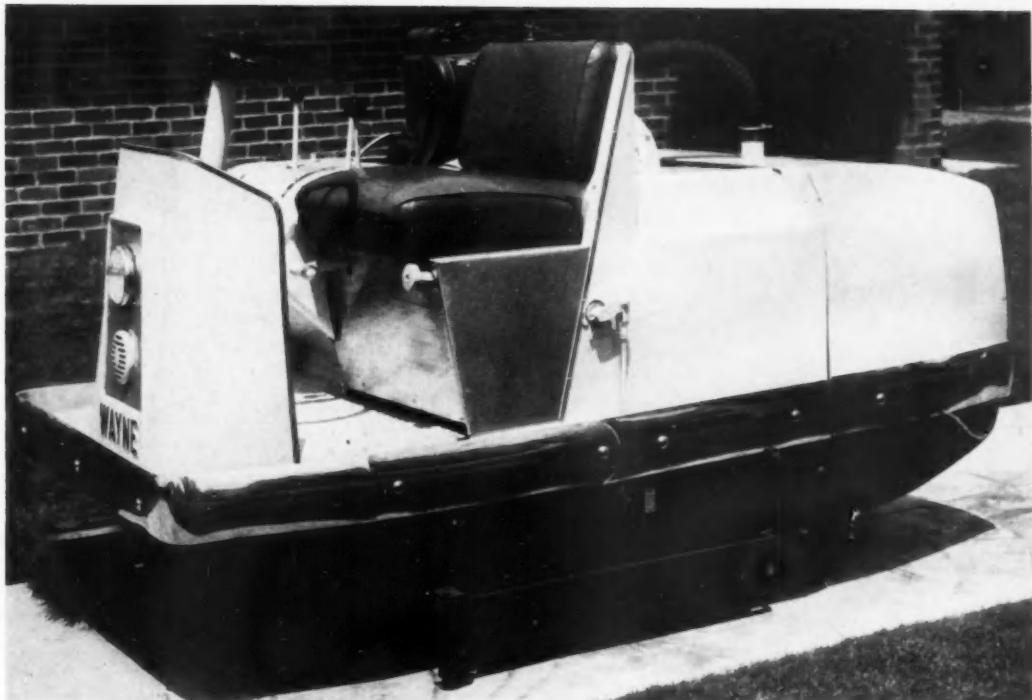
effectiveness
however, that
rectors, and
new jet air-
ers well for
for BOAC,
before the
he effect is
ticated feel-
the Boeing

a committ-
on's aircraft
chreiber and
committ-
erior scheme
oughout the
be watched

J.E.B.



The original industrial sweeper by the Wayne Manufacturing Co.



The sweeper redesigned by Henry Keck Associates.

THE ILLUSTRATIONS of this industrial road sweeper show how a successful cooperation between a manufacturer, the Wayne Manufacturing Co, California, and a firm of consultant industrial designers, Henry Keck Associates, has resulted in visual improvements which more directly express the machine's function of maintaining cleanliness inside factory workshops.

The manufacturer had introduced a number of new features in the original design. These features include an automatically cleaned air filter in the dust collection chamber so that dust free air only is discharged into the workshop; remote controls for dumping the debris chamber and for raising the rotary brush to allow larger objects to be collected; power steering; and a colour coded system for all controls which had also been carefully placed to allow convenient operation. In redesigning the sweeper an attempt was made to rearrange these various elements to give a greater visual integration.

A review of the manufacturer's factory facilities showed that, in common with the majority of firms producing mechanical handling equipment in Great Britain, production was based on simple fabricating techniques with little expenditure on power tools. The designers were able to make substantial improvements within the framework of these existing production methods. The shafts, frame members and hydraulic elements were enclosed, both for safety and aesthetic reasons, within a sheet steel casing, and the dust collector was removed and made a component part of the debris chamber. Unlike the earlier machine the seat was made to appear an integral part of the sweeper. To unify the whole design, the body work was encircled by a bumper at 'waist' level and a colour scheme devised to emphasise this linking element. In place of the industrial orange on the previous machine, a bright lemon yellow is used above the bumper and a dark grey below.

Mid-West furniture

LAZETTE VAN HOUTEN

A review of recent trends in American furniture design by the author was published in DESIGN for July 1956. She suggested that lack of invention and a dependence on traditional styles was causing modern Americans to concentrate on making the kitchen rather than the living room the most attractive and liveable part of the house. The following report shows that little has happened during the past year to reverse this situation.

THIS SEASON'S CROP of new furniture recently shown at the semi-annual markets in the Mid-West offers little in the way of good modern design news. The few firms which have attempted to initiate advanced design are seemingly content at present to try to hold the line. The vast majority of manufacturers have never been truly convinced that modern design was anything but a passing and pretty unhappy fancy. And they at present are all too eager to go backwards in time rather than to aid in developing a contemporary style - an endeavour which calls for more creativity, energy and under-

standing than they are either willing or able to supply.

As news, then, at the markets we had such oddities as Moorish and Venetian headboards, such styles as Viennese Directoire and British Colonial. Colonial generally was a successful selling word at the markets. American Colonial, something called English Rural, Spanish Colonial, anything labelled Provincial - all brought up-to-date, but with a warm and soothing emanation from the past, topped many buyers' lists.

Modern too, at the commercial level at least, tends to hark back to traditional styles of country origin. The folksy look is very much in fashion. At its best it leads the informed to the large and first-rate collections of Scandinavian furniture now available in this country and at its worst it leads to Elvis Presley. For that controversial and agile young man has now sponsored a line of furniture which its manufacturers with straight faces say was designed under the guitar player's "supervision". They also promise that it will "rock 'n' roll" the whole industry.

But there may be worse to come. A leading trade paper in a prophetic mood says that in 1957 designers casting about for further inspiration, will be turning their attention to new sources. "Possibly India, Thailand or untapped, primitive cultures," it is promised, will give American designers still greater scope.

It appears to not a few in America that manufacturers and designers alike (not to mention the befooled consumer), might benefit from more sense instead of more scope.



1 Bertha Schaefer's new sofa for M. Singer & Sons makes a point of the functional form as well as the aesthetic design of the wood arm. The sofa retails for approximately \$500.



2 Raymor showed a divider screen which may be bought in units to be hooked together. Wrought iron frame supports slatwood shelves and cabinet with plastic doors and leather thong pulls. The screen is made of sisal squares. Retail price is about \$52 per screen.



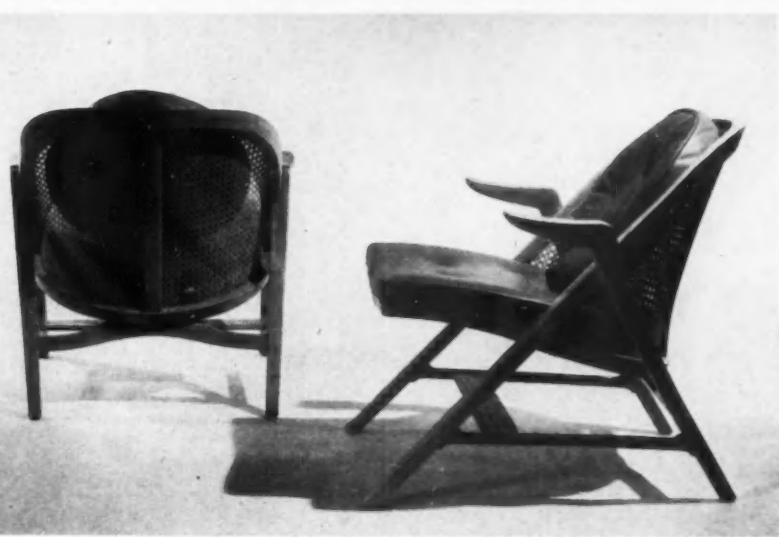
3 'Drawerless Dressers' designed by Henry P. Glass Associates for Saginaw Furniture Shops, make possible a clothes filing system. Available in a choice of several woods, the units retail from \$79 to \$89 a unit.

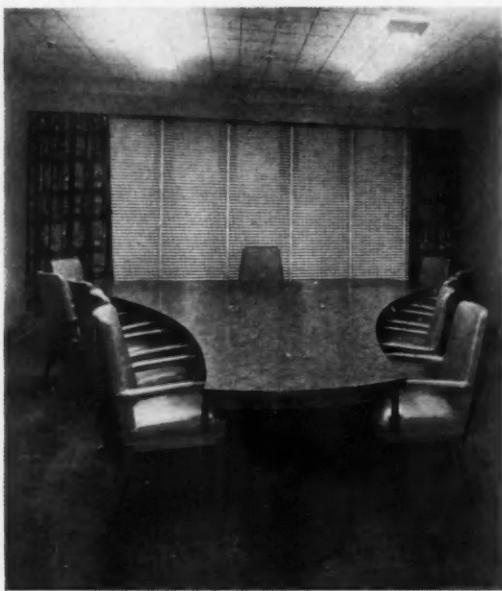
4 Stained ash three-seater unit from new group by Van Keppel-Green. As shown with a blue and green combination on sandstone colour metal frame. In this size retail price is \$250. Made also as a club chair and in a two-seater size. Tables to match.

5 Edward Wormley uses laminated ash with rosewood plugs at the junctures of the structural members. Back cushion is down-filled. It retails for approximately \$569 covered in leather.

6 George Nelson has designed a room divider for Howard Miller which has a wide variety of detachable shelves, storage units and accessory parts. Prices to be determined. Distributed by Raymor.

7 A collection of case-goods, tables and seating pieces for the low cost market has been designed by Allan Gould for Carlisle and Thayer Coggins. The 54-inch double dresser retails for about \$100, the secretary bar for about \$150; wood is walnut veneer. The wing chair is priced at about \$180 and the arm chair at about \$90.





A 13' 0" x 11' 6" 5-legged Boardroom table, veneered in natural Nigerian Pearwood.



One of a set of twelve fully upholstered Boardroom chairs in natural Nigerian Pearwood covered in harebell blue cowhide.

Write for further information and prices

BERESFORD & HICKS
of LONDON EC2
131-9 Curtain Road

SUNWAY

Vevo

BLINDS

Your best bedroom will look prettier, your living room more gracious, your dining room more dignified—your whole house cooler in summer, warmer in winter when you dress your windows in pastel coloured Sunway Vevo Blinds. So practical too; providing privacy, preventing draughts and protecting fabric from fading.

Insist on Sunway at your nearest retailer. Free colour brochure DE

VENETIAN VOGUE LIMITED, SLOUGH, BUCKS.



give every room
a **SUNWAY** smile

CoID

'Designs of the Year'

HRH The Duke of Edinburgh will present awards to manufacturers of the 12 products selected as 'Designs of the Year' in The Design Centre on May 10. These products, which have been chosen by a panel of Royal Designers for Industry from the year's Design Centre exhibits, will be shown in a special display at the Centre from May 11 - June 12. The panel's report and the selected designs will be published in DESIGN next month.

New members

The Council welcomes two new members recently appointed by the President of the Board of Trade; O. B. Miller, chairman of the John Lewis Partnership Ltd, whose wide knowledge of retail trading will be of great value to the CoID, and K. A. Noble, a director of the Co-operative Wholesale Society Ltd, who attended the CoID's congress last September and is a strong supporter of higher design standards.

REPORTS & CONFERENCES

Anatomy and design

Among the many ergonomics research groups which are accumulating information of use to designers is the Climate and Working Efficiency Research Unit at Oxford. The well known work of Dr H. D. Darcus on seat design is an example of this and was referred to in an article by Brigid O'Donovan (DESIGN July 1954 pages 17-21). A similar study led to the design of a

telephone switchboard that could be comfortably reached by operators of all shapes and sizes. Investigation of limb movements and the forces that can be exerted by hands and feet yield information that is applicable to a large range of design problems - from motor car controls and machine tools to sports equipment and clothes wringers. The work that has been done on the lifting and carrying of heavy loads could be studied by those who design suitcases, dustbins, trays and other large containers. Much of the work done by the unit is more theoretical than these remarks might suggest but the chief value of such research lies in the accumulation of knowledge and experience that can be applied to anatomical problems that arise in any field. The unit is maintained by the Medical Research Council and is directed by Professor Le Gros Clarke and Dr J. S. Weiner.

Furnishing hospitals

In a paper read to the summer school of the Institute of Hospital Administrators last year, and reprinted in a recent issue of 'The Hospital', P. H. Knighton, regional architect, Newcastle Regional Hospital Board, stressed that greater attention should be paid to the furniture and fittings in our hospitals. There could be more colour in the wards, in the curtains and bedspreads as well as in the interior decoration; there is still a need for well designed beds, bedside lockers and chairs for use in hospitals; narrow wardrobes, instead of being scattered round the ward singly, looking rather like grandfather clocks, "should be grouped in batteries of four to six at conveniently chosen points". Some of the problems of equipping hospitals were discussed in DESIGN, February 1956 pages 32-6.



Show houses in Scotland

At the invitation of the Department of Health for Scotland, the CoID Scottish Committee furnished and decorated three show houses which were on view to the public at a new housing estate at Muirhouse, Edinburgh recently. Two of the houses were for old people and the third was intended for a family with children. The furniture and furnishings were supplied by manufacturers

and three Edinburgh retailers; in its selection the Scottish Committee laid emphasis on products made in Scotland, and chose pieces which were reasonably priced as well as of a high standard of design. Some old furniture was used to show how old and new designs can be successfully combined. The illustration shows part of the living-dining room in a house intended for a family with young children; the chair is by Guy Rogers Ltd and the dining table and chairs by Furniture Industries Ltd.

Advertising in DESIGN

A paragraph in a recent issue of 'Advertiser's Weekly' draws attention to the standard of advertising in DESIGN; "One might, in fact, expect that anyone buying space in a periodical devoted to the subject of industrial and commercial design would take positive steps to ensure that his insertion was representative of the high standards advocated and illustrated in the editorial pages.

"In practice, the assumption seems sadly ill-founded, and really well conceived and well executed advertisements seem to be no less exceptional in the august pages of the official organ of the Council of Industrial Design than in monthlies with other worthy objectives and responsibilities", concludes the 'Advertiser's Weekly'.

Watch out for Russian consumer goods!

A press conference was organised recently by the institutions of civil, mechanical and electrical engineers to discuss a report on 'Engineering Education in Russia'; this was prepared by a team of nine engineers, who visited Russia on a fact finding mission last year, under the leadership of Professor E. Giffen, professor of civil and mechanical engineering at London University. The report discusses the methods of engineering education in Russia, where engineering teaching is the highest paid profession; three times as many engineers per head of population than in Great Britain are being trained and contact with industry and its needs is assured by interchange of personnel without detriment to the salary of those taking up teaching. L. Bruce Archer attended the conference for DESIGN and he has contributed this report on the discussions arising from it:

"After the official conference I spoke to Professor A. S. T. Thompson, head of the department of mechanical, civil and chemical engineering at the Royal College of Science and Technology in Glasgow, and P. E. Sleight, head of the civil engineering department, Brighton Technical College. They told me that although in the strict sense of teaching design the Russians are no better than we are, the Russian student has the advantage of doing exhaustive design projects which are criticised by practising experts whilst he is still at school. In many branches art and art appreciation or sculpture and architectural appreciation are compulsory for engineers, and Mr Sleight thought that the Leningrad structural engineering school was one of the few examples of an education establishment conducting 'liberal studies' in the widest and best sense that he had seen. Mr Sleight stressed the fact that although the Russian peasant was completely helpless technically a few decades ago, we could no longer afford to laugh at the Russian engineer and his hammer. The Russians, he said, believe in efficiency. When they set about product design, abominable though it is now, we ought to expect miracles. Their own people, he continued, are too poor to buy much, but if they really want to get into the consumer markets of the Middle East and the Far East we shall feel it. Once the Russians start they do things in a big way. When we in this country see it coming it will be already too late."

Design as a sales point

A credo which van manufacturers would do well to follow is put forward in an otherwise conventional

continued on page 57

EXHIBITION OF

CITY OF LEICESTER EDUCATION COMMITTEE

STUDENTS' WORK

LEICESTER COLLEGE OF ART

FOYLE'S GALLERY

Charing Cross Road, London W1

PRINCIPAL E. E. PULLÉE A.R.C.A., F.S.A.S.

10th June to 5th July 1957



DESIGNED BY
Ian Henderson Ltd
184 SLOANE STREET, S.W.1

Telephone:
BELGRAVIA 3271/2

1952/3 1953/4 1954/5 1955/6 1956/7

700

650

600

550

500

450

400

350

300

250

200

150

Last year over 600 firms used the RECORD OF DESIGNERS

Why don't you? It's a free service of introduction between manufacturers and designers.

RECORD OF DESIGNERS,
Council of Industrial Design,
The Design Centre,
28 Haymarket, London S.W.1

TRAfalgar 8000

sales leaflet by Vauxhall Motors Ltd. The 'Bedford' range of light vans is described as "designed from first to last for the work they have to do. No false streamlining - no awkward obstructions".

COMPETITIONS

Travel grants to the USA

The English-Speaking Unions of the Commonwealth and the United States are offering three travel grants to enable men and women of British nationality, who are connected with the decorative and fine arts and are well established in their professions, to make a 10-week study tour of the USA. Further details are available from the English-Speaking Union, 37 Charles Street, WI. The closing date for applications is June 11.

Emblem design competition

The Guild of Devon Craftsmen has announced details of a competition for the design of an emblem for the guild, which will be used on its notepaper, catalogues and display posters. The closing date for entries is May 31; further details are available from E. J. Baly, joint secretary, Higher Week, Totnes, Devon.

EXHIBITIONS

The British exhibit at Jamestown

The Anglo-American exhibition which forms part of the Jamestown festival to commemorate America's

Catalogue cover for mail order firm

Freemans (London SW9) Ltd first commissioned Abram Games to design its catalogue covers in 1946, and this design is the twentieth he has produced for the firm. The high standard of the catalogue as a whole is clearly the result of sound planning among photographers, illustrators, processing engravers and printers.



(Reprinted by courtesy of 'The Times')

A textured surface for concrete

A recent article in 'Rubber Developments', the journal of the Rubber Development Board, Market Buildings,

350th birthday (DESIGN December 1956 page 57) opened at Jamestown last month. The exhibition is in two parts - 'The British Heritage', which has been arranged by The Central Office of Information, and 'New World Achievement', prepared in the USA.

The British exhibit, which illustrates events from the first permanent British settlement in America to the time of James I, was prefabricated in this country to save dollars. It is in three sections and these have been designed by John and Sylvia Reid, Robert Nicholson and Charles Munro.

Atomic energy displays

James Gardner designed a display illustrating Britain's atomic energy programme at the 'International Trade Fair' which is being held in Hanover until May 7. This and a second display designed by Mr Gardner for the 'Sydney Industries Fair' to be held in Sydney, Australia from July 22-August 3, has been organised by the Board of Trade, in conjunction with the UK Atomic Energy Authority.

Buyers visiting the BIF

Buyers visiting the 'British Industries Fair', which is being held in Birmingham from May 6-17, will be granted special excursion rates on certain trains from Euston and large provincial towns.

Forthcoming exhibitions

'Instruments, Electronics and Automation' at Olympia, May 7-17.
'Business Efficiency', at Olympia, June 17-27.
'Festival of Women', at Wembley, June 7-29.

MISCELLANEOUS

Robert Wilson

ROBERT WILSON, art director of the British Colour Council, died recently.

Trained as an artist at the Royal College of Art and the Julian Academy in Paris, where he won a medal, Wilson was to make his reputation as an authority on colour from the scientific point of view and to become art director of the British Colour Council, a body which looks after questions of colour in industry and commerce. Wilson did not lack talent as an artist. Exhibitions of his work were held in London, and they met with critical approval, though it may be noted that it was generally his drawing rather than his colour that was praised. It is probable that Wilson's comparative lack of success as a painter was due to his obsession with the analogies between colour and sound - a subject that has tripped up more than one artist. But if his preoccupation with colour-music limited his expression as a painter it led him into researches into the nature of colour itself which proved of great value to both manufacturers and users of pigments and dyes employed in art and industry, particularly in the direction of establishing a universal standard or code of reference in colours.

Mark Lane, EC3, describes how concrete is now given a textured finish by casting it against specially moulded rubber mats. By this method the shuttering used to cast the concrete is lined with a textured rubber sheet, so that further processing once the concrete is cast is no longer necessary, and a wide variety of finishes is available to the designer.

Ironing boards' export success



One of the various types of ironing board which Bradley & Co Ltd exports to the United States.

During the past five years Bradley & Co Ltd has sold more than 250,000 all-metal ironing boards on the American market, and sales continue to rise in spite of competition from American manufacturers, keen prices and distribution problems. R. Turner Hood, the managing director of Bradley & Co Ltd has achieved this success by on-the-spot investigations of the market and a determination to produce a high quality board at a competitive price. He also made a special study of packaging problems after his agents had complained that the boards were damaged on arrival, and arranged for photographs to be taken of a batch of the boards *en route* so that the cartons could be redesigned.

A team of the firm's technicians is constantly working on methods of improving the board and increasing production; Bradley & Co Ltd is now the largest manufacturer of all metal ironing boards outside the USA and the firm's exports, which go all over the world, continue to rise.

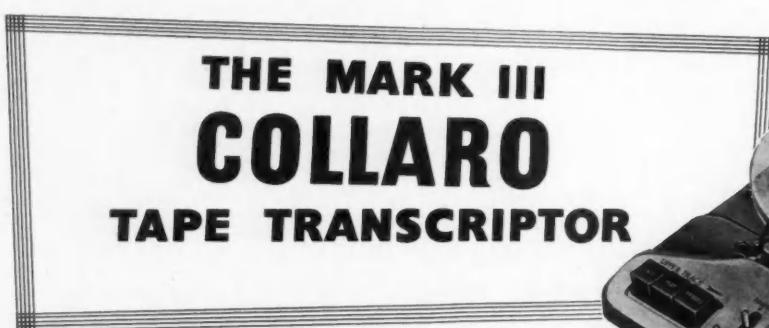
Recent appointments

T. Bond Worth & Sons Ltd, the carpet manufacturer, has announced the appointment of John Murray to its board of directors. Dr Murray is also a director of the Prospect Manufacturing Co Ltd, and his role as design consultant to Bakelite Ltd on the 'Warerite' range was discussed in the April issue of DESIGN (page 36).

Sir Laurence Merriam, deputy chairman and managing director of BX Plastics Ltd, has been appointed chairman of the Furniture Development Council in succession to Sir David Waley.

A new review of technology

'The Times' is now publishing a new monthly review called 'Technology'. The leader in the first issue summed up the aims of this review: "One of the chief continued on page 59



... Designed on Transcription quality principles for live recording, recording from F.M. Broadcasts, etc., and reproducing pre-recorded tapes. A twin-track model fitted with four heads, the new Collaro Tape Transcriber runs at 3½, 7½ and 15 inches per second.

Several new modifications are incorporated in the Mark III, including the Pause control and removable switches. Pre-amplifier, incorporating bias oscillator and power pack for the Tape Transcriber, is now available.



COLLARO LTD., RIPPLE WORKS, BY-PASS RD, BARKING, Essex

Telephone: Rippleway 5533 - Telex 8748 Telegrams: "Korilaro" - Telex - Barking

Makers of Record Changers, Gramophone Units, Pickups, Electric Motors, etc.

aims of 'The Times' in publishing 'Technology' is to provide a platform from which industrialists may declare their needs to the public, to Ministers, and to university professors, technical college heads and schoolmasters and mistresses. In this way 'Technology' will seek to make plain what industry wants from the educational system and where it is dissatisfied. It will treat management and design as essential, in their different ways, to good manufacture.'

A new shop for Eastbourne

W. H. Smith & Son Ltd. has recently opened a new shop in Eastbourne, a prototype for the firm's experiments in self-service, or 'simplified selling'. The appearance of a shop showing as much merchandise as possible, so that the customer can serve himself, needs careful handling by a designer, and in this case the results are not entirely successful. The shop at present lacks unity and seems overcrowded, faults which may be overcome as experience is gained in the arrangement of the new display units. After recalling the pioneer work of St John Hornby and Eric Gill (DESIGN November 1956 page 50) it is disappointing to report that no basic lettering is used for the various shop notices.

School for welding thermoplastics

Rediwick Ltd has started a welding school for thermoplastic materials at the firm's premises in Crawley. Two complete courses are held each month, and for the present these deal with the welding and fabrication of polythene and polyvinyl-chloride. Further details and information can be obtained from Rediwick Ltd, 17-27 Kelvin Way, Crawley, Sussex, telephone Crawley 1271.

LETTERS

The Provincial retailer's problems

SIR: I have now paid my fourth visit to The Design Centre and I am pleased to say that I still find the exhibition most interesting. I was particularly interested to see that a greater amount of furniture is now on display and I trust this is intended to be a permanent feature, as I feel that until now the selection of furniture has been meagre.

I was also pleased to see that the CoID had a display stand at the recent 'Furniture Exhibition' and was exhibiting a selection of furniture which was well admired by the public.

I wonder whether London retailers really appreciate the terrific advantage they have in comparison with the rest of the country? Here in the Haymarket, the heart of the West End of London, is a permanent exhibition which must inspire the public with a desire to purchase the items exhibited, and in addition the London retailers have had the advantage of a well publicised exhibition at Earls Court, which nearly 79,000 people visited.

I am certain that 95 per cent of the public that visited the 'Furniture Exhibition' must live within a radius of 15 miles of the city of London and therefore the London retailers will reap the benefit of additional business.

In the Provinces there are no such features as a

CoID exhibition or a furniture exhibition and therefore without these incentives the public interest is not stimulated. I personally would heartily welcome in Birmingham a permanent CoID exhibition or alternatively an exhibition for a period of six months. I am confident that this exhibition would attract an enormous amount of attention throughout the Midlands.

When I visited The Design Centre some months ago, I took the opportunity of looking through some of the illustrations in 'Design Review', but was disappointed to find very few other visitors there. It



Arthur Segel photographed in The Design Centre.

appeared to me that 'Design Review' was somewhat hidden away and the public not encouraged to spend any time there. I was pleased to note on my last visit that a section of the right hand dividing wall in the main showroom had been removed so that the public were more aware that these files are available for its use.

May I also mention that upon several occasions I have asked the staff for information and upon every occasion my queries have been received and dealt with very courteously and intelligently.

Let me conclude by heartily congratulating the CoID on its very fine efforts during recent years to enable the British furniture manufacturer to realise that good design and quality are most important. I am confident that the CoID's permanent exhibition is of immense value both to manufacturers and retailers.

A. SEGEL
Furniture Buyer
Times Furnishing Co Ltd
24 High Street
Birmingham 5

Responsibility to the consumer

SIR: The January issue of DESIGN contained some observations which are worth considering in the light of Rosetta Desbrow's article 'Advice from the experts' in the March issue (pages 40-5). Consider a list of these points together with others of pertinence drawn from recent Press reports: the possibility of manufacturers' doubting the value of sending designers abroad (DESIGN January page 13); the need for independent design research (page 19) and the need for a scientific approach to design research (page 21); the need in Great Britain for an institute of design with university affiliation (page 57); panic retrenchment policies; faint mutterings already about the dangers to British industry in European Free Trade. In the light of these problems, the approach of the Good Housekeeping

Institute to the evaluation of industry's products seems amateur and pedestrian.

Looking at HFI, the Swedish 'Home Research Institute' discussed by Rosetta Desbrow, with this in mind, we see reflected a set of values in which responsibility to the consumer is obviously high on the list: the quality of domestic goods on sale in Sweden tells us this. Nevertheless, HFI has not rested on its laurels; so that it could operate in wider fields than the purely domestic, and incorporate such work as was formerly carried out by other institutes, HFI was re-organised at the beginning of this year when it became fully state-supported and was renamed the State Institute for Consumer Research (Statens Institut för Konsumentfrågor). This change will obviously widen the co-operation on research which HFI had with such bodies as the Swedish Standards Institute, the Ministry of Housing, building associations, city councils and the Royal Institute of Technology in Stockholm.

It is timely at this point to remember that plans for the integration of design research in England were drawn up in the early days of the CoID (summarised in the leaflet 'What is a Design Centre?') The significance of the word co-operation should not be missed; we have only to compare the standards of design of the English and Swedish Co-ops to see that something is amiss. The attitude of English firms does seem to have some connection with the languishing of the design centre idea. Now that the part of the work of the CoID in educating the public has reached such a promising stage, it would seem that the time is ripe to reconsider ways of inducing manufacturers to act.

CHARLES DAWSON
39 Ewart Rd
Liverpool 16

Servicing domestic equipment

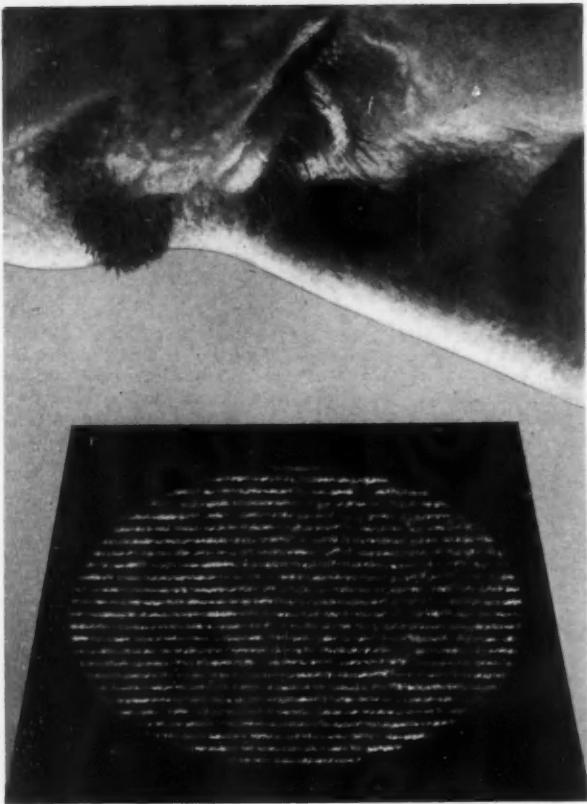
SIR: The homes of Britain are increasingly becoming littered with disabled domestic equipment which is usually described as 'waiting for the man to come and put it right'. The standard of service offered to the user varies from the ubiquitous excellence of the gas

continued on page 61

TUC chairman in The Design Centre

Sir Thomas Williamson, left, chairman of the Trades Union Congress visited The Design Centre recently, and is seen here discussing one of the exhibits with Sir Gordon Russell, director, CoID.





One and a half million times larger than life

You are looking at something which, until recently, has never been seen by the human eye. It is a photograph of a metal compound, magnified 1½ million times, showing lines of molecules one ten millionth of a centimetre apart.

A TI scientist took the photograph using an electron microscope at TI's research laboratories near Cambridge as a first step in a study of the strength, fracture, fatigue and creep of metals. Direct photographs have been taken of the defects which affect the behaviour of metals under stress. The further study of these defects and their movement may eventually lead to the development of metals, very much stronger than those at present available.

Over 200 scientists and technologists are working for the community through TI. Some long-range projects are regarded as a contribution to the pool of knowledge, but the results of the main body of work are to be seen in the design and quality of the wide range of existing products and the new products and processes which stem from TI's seven Divisions:

STEEL TUBE DIVISION · ENGINEERING DIVISION
ELECTRICAL DIVISION · ALUMINIUM DIVISION · STEEL DIVISION
CYCLE DIVISION · GENERAL DIVISION



TUBE INVESTMENTS LIMITED

The Adelphi, London, W.C.2 · Trafalgar 5633

Lounge

& Office

Chairs



Armchair 901 'PENGE'
Upholstered with
Plastic Foam

Ardale

Chairs of quality and elegant design
'Seen in the best places'. Obtainable from
leading contract furnishers
Specify 'Ardale' and write for brochure

Occasional chair 902
'KIRBY' upholstered
with Plastic Foam



AR

A. Reason & Sons Ltd

Weardale Works, Weardale Rd, London, S.E.13

phone LEE Green 3344

For Lovers of Comfort

industry, whose service engineers are deployed promptly and authoritatively, to the 'couldn't care less' attitude of the small minority of retailers who regard the vendor-customer relationship as exhausted when the initial sale of the product is made.

The consumer must, it is suggested, be more prepared to pay for adequate and regular service of his equipment: the seller of the appliance must, for his part, be prepared cheerfully to accept the responsibility of servicing the equipment he sells.

Or is there perhaps an alternative? Our homes are becoming so full of equipment that there may be scope for a service specialist who would canvas our business by offering a service agreement with scheduled charges for a wide range of different pieces of domestic equipment. In short, a sort of 'National Health Service' for domestic equipment. Were this to develop, it might well affect the design of domestic equipment in the sense that the designer could be confident that regular servicing would definitely be available.

ERIC BELLINGHAM
3 Buckingham Gate
London SW1

BOOKS

Ladengestaltung (Shop Design), Robert Gutmann and Alexander Koch, Verlagsanstalt Alexander Koch GmbH, Stuttgart, Alec Tiranti Ltd, £3 18s 6d

In these days when the design of shops and stores is so much to the forefront, it is not surprising to find the subject so well featured in current book lists. The latest addition is 'Ladengestaltung' by Robert Gutmann and Alexander Koch, a publication produced and printed in Germany with text in both German and English.

This expensive and extremely polished and well produced volume is essentially a picture book and as such may be considered as complementary to the few excellent text books available on the subject. The illustrations are first class throughout and in each case serve to make their point. Short concise captions tell their story in as few words as possible, although it is a pity that the English versions were not more carefully translated, the language in some cases being somewhat stilted.

In their preface the authors point out that it is not their intention "to illustrate examples of the type of shop currently in vogue but to show such solutions as are distinguished by efficient organisation, modern architectural treatment, original design ideas and the courage to experiment and innovate". The final selection of pictures shows that they have succeeded in their aim. The work of 64 designers from nine countries embracing a wide selection of all types are included in the illustrations and it is satisfactory to note that 14 British designers share second place with Germany in having their work featured - 19 American designers leading the field. Well drawn plans, elevations, sections and sketches augment the photographic illustrations to tell the full story. The book has a most attractive dust cover and is in every way a worthy addition to the

bookshelf of the architect and designer who wants to keep up to date in this fascinating aspect of contemporary design.

ELLIS E. SOMAKE

Shops and Stores To-day, Ellis E. Somake and Rolf Hellberg, B. T. Batsford Ltd, £3 3s

There is a great deal to be learnt from this book, for both authors are designers of considerable experience, and the text covers such things as site selection, shopping centres, display policy, mechanical services and even the lumen output and life of lamps; some of the chapters are contributed by specialists in various fields of design.

However, since many small shopkeepers today are endeavouring to keep pace with the multiple stores with regard to the design of their shops, there could perhaps have been more illustrations of fishmongers' and butchers' shops, and many of the small shops that have been really effectively redesigned with the minimum expense. There is also not a single reference to Olivetti, and it would have been interesting to have seen one or two examples of that nearly lost art, the painted sign.

The illustrations show that the furniture and light fittings, etc in a shop are far more successful if they are designed by a specialist. It is hard to believe however,

Don Wallance has chosen 31 examples of how good design has widened markets and increased sales. The cases that he has chosen differ widely and include examples from large and small scale industries, ranging from swimsuits to refrigerators. The scope of such a book is most important because it is essential to preclude the argument 'What works in his industry won't work in mine'.

This book has well chosen examples and is well written. Most of the examples are familiar to designers and so, from that point of view, there is little that is new, but manufacturers who read it carefully will undoubtedly be able to learn something of the way in which different kinds of designers work and of their place in various industries.

JOHN REID

Italic Handwriting chart, Tom Gourdie, The Crafts Centre, 1s 3d

A useful chart (13 inches by 9½ inches) for teachers, students, and indeed everyone engaged in writing anything from an application form to a bread-and-butter letter. All the basic rules are given in exemplary form, although the rather austere sans serif capitals may prove a severe test for the beginner.

MARIE-JAQUELINE LANCASTER



David Greig's shop, Canterbury. Architect: Robert Paine and Partners.

that the staircase (illustration 40) is really desirable, since many people do not like heights, and open treads upset them. However it is to our credit that the most satisfying work illustrated is British, namely David Greig's shop at Canterbury.

This book will no doubt act as a spur to many shopkeepers to do something about their premises and perhaps see that a design policy is necessary for success.

GEOFFREY DUNN

Shaping America's Products, Don Wallance, Reinhold Publishing Corp, USA, Chapman & Hall Ltd, £4

"Good design pays off!", is the message of this book. Although students of design, and designers for that matter, would do well to read it, the book will be of most use to manufacturers.

Industry seems to be gradually becoming aware that badly designed objects can be commercially dangerous and more and more firms are realising that their products must be well designed if they are to meet the competition of today; this book should help to further the cause.

MANUFACTURERS in this issue

Antler Ltd, Great Charles St, Birmingham 3
Barrow, Hepburn & Gale Ltd, 18 Northampton Sq, Leicester
Brades, Nash, Tyzack Ltd, Wollaston Mills, Stourbridge
Bradley & Co Ltd, Albion Works, Bilston, Staffs
Bristol Aircraft Co Ltd, Filton, Bristol
Cavendish Textiles Ltd, 11-12 Old Cavendish St, W1
S. Clarke & Co Ltd, 33 Bowring Green Lane, EC1
Furniture Industries Ltd, High Wycombe, Bucks
William Grant & Sons Ltd, 206-8 West George St, Glasgow C2
Harrison & Sons Ltd, 44-7 St Martin's Lane, WC2
Hygena Cabinets (Liverpool) Ltd, Webber Road, Kirkby
Industrial Estate, Liverpool
L. Lazarus & Sons Ltd, Majority Works, Angel Factory
Colony, W8
Microcell Ltd, Imperial Buildings, 56 Kingsway, WC2
S. E. Norris & Co Ltd, Shadwell Leather Works, Dagenham
S. Noton & Co Ltd, Blackhorse Lane, E17
Papworth Industries, Papworth Everard, Cambridge
Parker, Wakeling & Co Ltd, Victor Works, Garman Rd, N17
P. Pell & Sons Ltd, Pelcraft Works, Downs Rd, E5
Prospect Manufacturing Co Ltd, Walter Street, Blackburn
Ernest Race Ltd, 22 Union Rd, SW4
Rocul Ltd, 9-13 Lonsdale Rd, NW6
Guy Rogers Ltd, Relaxwell Works, Edwards Lane,
Liverpool 19
George Salter & Co Ltd, 31-3 High Holborn, WC1
Archie Shine Ltd, 38 Upper Clapton Rd, E5
Sinclair Owen & Co Ltd, Browncross Street, Salford, Lancs
Smith, Englefield & Co Ltd, 24 Parliament St, Nottingham
Spicers Ltd, 19 New Bridge St, EC4
Wilkinson & Cuthbert Ltd, 47 Eyre Lane, Sheffield 1
Wilkinson Sword Ltd, Sword Works, W4
W. Wood & Son Ltd, 114-118 Castle St, Reading, Berks

DESIGNERS in this issue

Otto Brill; Huile Chadwick, ARCA, FSIA; T. Cross; Donald Diamond; George Fejér, MSA; Abram Games, FSIA; James Gardner, OBE, RDI, FSIA; Kenneth Garland, art editor; Michael Goaman, MSA; J. Hanauer, MSA; Robert Heritage, DESCA, MSA; Alex Langfield; A. Lee; L. R. Lewis; Eric Lyons, FRIBA, MSA; Charles Munro, MBE; John Murray, PhD, ARIBA; Robert Nicholson, FSIA; H. Piotrowski; Ernest Race, RDI, FSIA; John Reid, ARIBA, MSA; Sylvia Reid, ARIBA, FSIA; A. Rosister; P. Schenkel, MSA; Hans Schleifer, FSIA; Gaby Schreiber, FSIA; J. Spring, DESCA; J. W. Waterer, RDI, FSIA; A. W. Windsor.
Addressess of designers may be obtained from the Editor.



Photograph by kind permission of British Railways

ANOTHER FINE INSTALLATION OF

'SUNUMINIUM' VENETIAN BLINDS fitted by J. AVERY & CO. (Est. 1834) LTD.

81 Gt. Portland St, London, W.1. 791 Christchurch Rd, Bournemouth

Agents in MANCHESTER, BIRMINGHAM, ABERDEEN & GLASGOW

Exceptionally robust blinds featuring an unusually rugged simple raising and tilting mechanism enclosed in an all-metal head fitted with French Fleur-de-lis or plastic coated tape. A technical representative will call at your request. Drawings and leaflets available.

BRITISH MATERIALS - BRITISH DESIGN - BRITISH LABOUR

design

print

display

WALKERS

(showcards) limited

MANCHESTER 1.

CEN. 4965/6/7

Improve the
bad roads and
enhance the good..

... USE **SMOOTHLINE GUARDPOSTS**

Fitted for miniature fluorescent or tungsten lamps. Fluorescent conversion units available for existing guardposts.

**GOWSHALL
LIMITED**

Rood End Road, Oldbury, Birmingham
(Phone: BROdwell 2291-2) Lamb's Conduit Passage,
Red Lion Square, W.C. (CHAncery 7042 & 7045)

Classified advertisements

Rates: 9d per word (minimum, 15s). Box numbers, 1s extra

Copy: Last date for copy is 10th of month preceding date of issue

RECORD OF DESIGNERS

MANUFACTURERS requiring the services of designers, whether for staff positions or in a consultant capacity, are invited to apply to the Record of Designers, CoID, London, or to the CoID, Scottish Committee, 46 West George Street, Glasgow C2. They can obtain a short list of designers suitable to their particular purposes, which should be explained in some detail. This service is free to British manufacturers and incurs no obligation.

SITUATIONS VACANT

OLD-ESTABLISHED manufacturing firm offer permanent pensionable position in the London area, in connection with sales development, to man with good background: knowledge of building trade or architectural profession an advantage, but ability to make and follow up contacts on all levels essential. Full details, including age, experience, salary, etc., to Box 239, DESIGN, 28 Haymarket, London SW1.

GIRL WITH a flair for colour and design with sound secretarial training, offered interesting post as secretary to Planning Director, furnishing fabric manufacturers. West End office. Box 240, DESIGN, 28 Haymarket, London SW1.

BUCKINGHAMSHIRE EDUCATION COMMITTEE
HIGH WYCOMBE COLLEGE OF FURTHER EDUCATION
(Principal: W. J. Davies, J.P., B.Sc.)

Lecturer in Advanced Furniture Design. Candidates must have had sound basic training together with suitable industrial experience. Architectural experience or ability to offer additional subjects such as Management, Work Study etc., would be an advantage. Salary will be paid on the Scale £1,200 x £30 to a maximum of £1,350 per annum. Further details and forms of application may be obtained from the Principal, Queen Alexandra Road, High Wycombe, to whom they should be returned as soon as possible.

THORN ELECTRICAL INDUSTRIES LTD, have a vacancy in the Atlas Lighting Division for a designer draughtsman for lighting equipment. Art school and technical school training preferred, and a knowledge of engineering workshop practice is desirable. Pension scheme and free life assurance. Applications giving details of age, education and experience to Staff Manager, 233 Shaftesbury Avenue, London WC2.

H. & R. JOHNSON LTD, ceramic glazed tile manufacturers, require an experienced designer/draughtsman. Applicants must have good qualifications and the ability to produce designs for printing and publicity purposes. Commencing salary approx. £700 to suitable applicant. Apply by letter in first instance to Secretary, Highgate Tile Works, Tunstall, Stoke-on-Trent.

LONDON COUNTY COUNCIL
BARRETT STREET TECHNICAL COLLEGE
Applications are invited for part-time day posts in Design Department to teach general art and design to full-time students of Dress and Hairdressing Depts. Knowledge of History of Costume an advantage. Fee for 3-hour session £2 12s. 6d. Apply to Principal at College, Barrett Street, W1. (657)

DESIGNER REQUIRED for design and development of Plastic components and fittings for furniture and kitchen utensil trades, first class designer with appreciation of modern styling. Healey Mouldings Ltd, Wolverhampton Road, Oldbury, Birmingham.

TRAINED DESIGNER required as assistant by progressive design organisation engaged on varied and interesting contemporary work. Applicant must be first class at working drawings and perspectives. Box 237, DESIGN, 28 Haymarket, London SW1.

IAN HENDERSON LTD has an interesting and progressive opening for an experienced Designer/Draughtsman with business ability. Main activity would be on contract enquiries: office interiors, boardrooms, showrooms, etc. Original thinking important but the emphasis is on sound high-grade modern work and traditional when required. Great scope for a quick worker having personality and able to shoulder some responsibility. Applications to Mr Ian Henderson, 184 Sloane Street, SW1.

BUCKINGHAMSHIRE EDUCATION COMMITTEE
HIGH WYCOMBE COLLEGE OF FURTHER EDUCATION

(Principal: W. J. Davies, J.P., B.Sc.)

(1) Assistant Grade A to teach Furniture Drawing and Design. Ability to assist with practical Cabinet Making would be an advantage. Candidates should have good industrial experience and should possess a suitable Technical qualification. (2) Lecturer in Advanced Furniture Design. Candidates must have had sound basic training together with suitable industrial experience. Architectural experience or ability to offer additional subjects such as Management, Work Study etc., would be an advantage. Salaries will be paid in accordance with the appropriate Burnham Report. Further details and forms of application may be obtained from the Principal, Queen Alexandra Road, High Wycombe, to whom they should be returned as soon as possible.

BALDING & MANSELL LIMITED, DESIGNER-PRINTERS. An unusual opportunity occurs for a man with an appreciation of graphic design and with the ability to sell at the highest level. An existing detailed knowledge of print is less essential than a lively mind, a cultured background and enthusiasm. The work will be based on our Head Offices in Bloomsbury and the earnings and conditions will be attractive. Applications should be sent to The Chairman, Balding & Mansell Limited, 3 Bloomsbury Place, London WC1.

COMMISSIONS & DESIGNS WANTED

MODERN DESIGNS wanted for Wedding Stationery and Floral Stationery. Submit limited number of designs or reproductions to Macniven & Cameron Ltd, Blair Street, Edinburgh.

HIGHLY QUALIFIED and experienced mural and tapestry designer seeks commissions. Exhibition backgrounds a speciality. Highest standards of workmanship guaranteed. Philip Meeson, 33 Corve Street, Ludlow, Shropshire.

TYPOGRAPHIC DESIGNER experienced in exhibition and press typography offers free-lance services. Flat production for exhibitions; re-styling, design and production of house journals, stationery, brochures, etc. Box 238, DESIGN, 28 Haymarket, London SW1.

PRODUCTION ORGANISED. Product and production improvement. Design, development and manufacture of ideas concerning electric motors, motorised appliances, equipment. We offer inventiveness, experience and success. M.E.C., Crown Lane, Marlow, Bucks.

THE CUSTOM DESIGN GROUP will undertake Furniture, Interiors, Shopfitting, Exhibition, Display features, Mobiles and prototypes etc. Opportunity to obtain the services of specialist designers. Box 235, DESIGN, 28 Haymarket, London SW1.

SPECIALIST DESIGNS for displays, exhibitions and stands, showrooms, and interiors, executed with personal supervision and attention to detail. Box 234, DESIGN, 28 Haymarket, London SW1.

TWO DESIGNERS offer services in brochure and book design, illustration and typography. Realistic fees. Box 236, DESIGN, 28 Haymarket, London SW1.

WEST MIDLAND ARTS LIMITED, Barbourne, Worcester. Artists, designers for sales and technical literature, packaging, posters and point-of-sales aids. Unique speculative layout service. Write for details. Competitive rates, first class work. Quotations given.

FREE LANCE INDUSTRIAL DESIGNER offers services for product design in engineering and plastics. Original design, re-design, models, prototypes, working drawings. Box 181, DESIGN, 28 Haymarket, London SW1.

EXHIBITION STANDS, Interiors and Quantity Displays. Our comprehensive exhibition service specialises in three-dimensional advertising, working to Designers' and Advertising Agents' own drawings, or to our own designs. We shall be pleased to quote you. FLUSH WOODWORK LIMITED, 641/3 Romford Road, London E12. Telephone GRANGewood 0123 (3 lines).

INTENDING EXHIBITORS at Overseas Fairs should contact DAVIES TURNER & CO LTD for free guidance. Specialists in packing and shipping Exhibits and Stands. Phone SLOANE 3455 or write to 4 Lower Belgrave Street, London SW1, quoting Ref USX 680.

DESIGNS, IDEAS, detailed drawings for new products. W. Bruce Brown, MSA, FRS, industrial designer, 140 Roding Road, Loughton, Essex. LOUGHTON 4138.

PHOTOGRAPHY

HAVING PERFECTED the new American process of Colour Photography for Catalogue and Brochure publications, we feel this service together with a live Artists' Studio and a fully automatic Printing Plant will be of value to readers of DESIGN. A personal service by the Directors to enquiries is assured. Nutt & Stevens Ltd, 3 Nedham Street, Leicester.

JOHN BAKER welcomes your enquiries concerning creative photography at our studio or on location. Telephone PADDINGTON 2119. 8 Norfolk Mews, London W2.

continued on page 64

CLASSIFIED *advertisements*

continued from page 63

PROTOTYPES & MODEL MAKING

RICHARD DENDY & ASSOCIATES, 4, 5 and 6 Seaton Place, Hampstead Road, NW1, telephone EUSTON 7617 and 1981, welcome your inquiries for experimental, engineering, architectural models, clay modelling, commercial lettering, rubber and plastic prototypes, animated displays, designs and drawings, prototypes and mockups, film special effects and models, production runs in rubber, plastic and white metal, amusement slot machines, theatrical properties, masks and costume trimmings and window displays.

MISCELLANEOUS

METAL - WIRE - TUBULAR WORK. Let us manufacture your prototypes and/or production runs. Holborn Metal Works, 334 Upper Street, N1. CAN 8042.

FRAMING

PICTURE FRAMES available in all sizes. Special design and finishes made to order. Mounts cut in a fine range of new colours. The Rowley Gallery, 87 Camden Street, off Kensington Church Street, W8. PARK 4349.

PRINTING

THE CARAVEL PRESS offers a practical design and printing service to all who appreciate original ideas and first-class production. 11 Moxon Street, London W1. HUNTER 0492.

ADVERTISERS in this issue

Avery, J. & Co Ltd	...	...	...	...	...	62
Bakelite Ltd	...	...	...	...	...	cover IV
Balding & Mansell Ltd	...	...	...	...	...	9
Beresford & Hicks	...	...	...	...	...	54
British Aluminium Co Ltd	...	...	...	...	...	cover III
British Geon Ltd	...	...	...	...	...	1
BIP Chemicals Ltd	...	...	...	...	...	14
Catesby & Co	...	...	...	...	...	10
Central School of Arts and Crafts	...	...	...	...	...	64
Collaro Ltd	...	...	...	...	...	58
Donald Bros Ltd	...	...	...	...	...	cover II
Dolcis Studio	...	...	...	...	...	8
Expanded Metal Company Ltd, The	...	...	...	...	...	5
Gowshall Ltd	...	...	...	...	...	62
Harvey, G. A. & Co (London) Ltd	...	...	...	...	...	7
Heals' Contracts Ltd	...	...	...	...	...	2
Henderson, Ian Ltd	...	...	...	...	...	56
Hille of London Ltd	...	...	...	...	...	10
Imperial Chemical Industries	...	...	...	...	...	12
Leicester College of Art	...	...	...	...	...	56
Line, John & Sons Ltd	...	...	...	...	...	58
Mullard Research Laboratories	...	...	...	...	...	64
National Cash Register Company Ltd, The	...	...	...	...	...	6
Reason, A. & Sons Ltd	...	...	...	...	...	60
Tibor/Stockwell/Gimson & Slater	...	...	...	...	...	11
Tube Investments Ltd	...	...	...	...	...	60
Turner, Albert & Son Ltd	...	...	...	...	...	64
Venetian Vogue Ltd	...	...	...	...	...	54
Walker (Showcards) Ltd	...	...	...	...	...	62
Zinc Alloy Die Casters' Association	...	...	...	...	...	3

DESIGN is published for the Council of Industrial Design, The Design Centre, 28 Haymarket, London SW1 (Scottish Committee: at 46 West George Street, Glasgow C2) by Her Majesty's Stationery Office

London County Council

CENTRAL SCHOOL

of ARTS and CRAFTS

Southampton Row, WC1
HOLBORN 9184

Full-time and part-time day
and evening courses in

interior design, pottery

industrial design

textiles and weaving

silversmithing

theatrical costume and décor

painting, drawing

printing

book production

MULLARD RESEARCH LABORATORIES

have vacancies in their Engineering Division for Senior Electro-Mechanical Engineers, for design and development work, on a wide range of projects including the following:-

ELECTRO-MECHANICAL CONTROL DEVICES

SPECIALISED MACHINE TOOL DESIGN

PARTICLE ACCELERATORS

ULTRASONIC TECHNIQUES

COMPONENTS AND ELECTRONIC EQUIPMENT

Successful applicants will have at their disposal a well equipped Engineering Laboratory and will be supported by an excellent Drawing Office and model shop facilities.

Good salaries commensurate with experience and qualifications. These posts come within the Company's Life Assurance and Superannuation Schemes.

Apply in writing to the Personnel Officer, Mullard Research Laboratories, Cross Oak Lane, Salfords, Near Redhill.

GATHERING WOODS IN MAY!

As well as Chestnut, Walnut and Beech, we can offer you Acacia, Apple, Ash, Cedar, Cherry, Cypress, Elm, Hornbeam, Lime, Plane, Sycamore, and, of course, superb Sussex Oak.

TURNERS of LEWES

the country cousins
with the city stocks



Albert Turner & Son Limited
35 High Street, Lewes, Sussex
Telephones: Lewes 520 & 521

Printed in Great Britain by Balding & Mansell, London and Wisbech

l décor

ES

tro-

on a

ped

lent

ons.

and

ora-

AY?

t and

acia,

me,

urse,

VES

Limited

Sussex

0 & 52

agow (2) b
and Wisbec